**Literature Evaluation Table: Evaluating Primary Quantitative Research, Reflective Thinking, and Criteria for Quality Assessment**

This essay will explore three interconnected objectives in the Literature Evaluation Table. First, it will discuss the evaluation of primary quantitative research in the context of a PICOT-D question. Next, it will emphasise the implication of reflective thinking when receiving feedback, particularly in the setting of a practice improvement project. Finally, it will describe the criteria used to determine the quality of primary quantitative research articles. By addressing these objectives, this essay aims to provide insights into evaluating research and effectively incorporating feedback.

**Literature Evaluation Table: Objective 1: Evaluating Primary Quantitative Research for a PICOT-D Question**



Primary quantitative research is critical in informing practice improvement projects and evidence-based practice. The QualityLiterature Evaluation Table of such research is vital to ensure its significance, rigour, and applicability to the clinical question. The "Literature Evaluation Table" provides a comprehensive framework for evaluating primary quantitative research articles. The criteria outlined in this table include study design, sample size, data collection methods, statistical analysis, results, and conclusion. Each bar serves a specific purpose in assessing the quality and validity of the research.

The study design criterion as a case. It helps determine whether the research is observational or experimental and whether it aligns with the research question and hypothesis. Reliable and valid results can be produced if a well-designed study with a transparent methodology is used. The sample size is an alternative critical criterion as it affects the statistical power and generalizability of the findings. A larger sample size increases the study’s credibility and the likelihood of detecting meaningful effects.

Data collection methods and statistical analysis are crucial criteria for evaluating the reliability and validity of the research findings. The data collection methods should be clearly described and appropriate for the research question. Similarly, the statistical analysis should match the study design and ensure the results are statistically significant.

PICOT-D question can be determined if the research findings from the results and conclusion criterion answer it. The results should be presented clearly, and the conclusion should be based on the findings and align with the study objectives.

Among the criteria outlined in the "Literature Evaluation Table," the most helpful bar in identifying a qualifying research article depends on the precise research question and the context of the practice improvement project. Nevertheless, the study design criterion is often considered critical as it lays the foundation for the research methodology and determines the reliability and validity of the findings.

The "Levels of Evidence in Research" chart and the "Criteria for Acceptable Research" further support the search and use of the "Literature Evaluation Table." The "Levels of Evidence in Research" chart categorises different study designs based on their strength of evidence, allowing researchers to identify the most suitable study design for their research question. The "Criteria for Acceptable Research" provide additional guidance on the critical elements for a research article to be acceptable.

**Objective 2: Reflective Thinking and Feedback**



Reflective thinking is a critical skill that aids in effectively incorporating feedback. When receiving feedback on assignments or practice improvement projects, engaging in reflective learning lets individuals approach feedback objectively and openly.

A systematic process can be adapted to review and incorporate instructor assignment feedback. First, locating all the input on the returned documents, including comments and track changes, is essential. By carefully reviewing the feedback, one can understand the areas that require improvement and identify specific suggestions or recommendations.

Incorporating feedback to ensure improvement involves actively implementing the suggested changes or modifications. This process may require revisiting the original assignment or project and revising based on the feedback received. It is essential to critically analyse the feedback, assess its validity, and evaluate its potential impact on the overall quality of the work. By integrating the input thoughtfully, improvement can be achieved in subsequent iterations.

Reflective learning can be pivotal in fostering an objective and open mindset. Reflective thinking lets individuals examine their assumptions, biases, and preconceived notions, permitting them to deliberate feedback as an opportunity for growth rather than a critique. Through reflective thinking, individuals can discover their strengths and weaknesses, recognise areas for improvement, and develop strategies to enhance their skills and knowledge.

In moments where resistance to feedback arises, reflective learning can be valuable. By self-reflection, individuals can explore the reasons behind their opposition, such as ego, fear of failure, or attachment to one's work. Reflective thinking can help individuals distinguish their identity from the feedback received and focus on the objective aspects of improvement. It allows for a deeper understanding of one's thoughts and emotions, leading to a more positive and open approach to feedback.

**Objective 3: Criteria for Quality Assessment of Primary Quantitative Research**

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Determining the quality of primary quantitative research articles involves assessing various criteria that guarantee the findings' reliability, validity, and generalizability. These criteria provide a framework for evaluating the rigour and trustworthiness of the research, ultimately guiding evidence-based decision-making.

The criteria for evaluating the quality of primary quantitative research articles include study design, sample size and sampling methods, data collection instruments, statistical analysis, results, and conclusions. Moreover, ethical considerations, funding sources, and conflicts of interest contribute to the overall assessment of research quality.

Study design is a fundamental criterion that determines the validity and strength of evidence. Randomised controlled trials (RCTs) are generally considered the gold standard for evaluating interventions, while observational studies provide valued insights into associations and risk factors. The appropriateness of the study design to the research question, along with considerations of bias and confounding factors, helps establish the quality of the research.

Sample size and sampling methods are critical determinants of the statistical power and generalizability of the research findings. Larger sample sizes increase accuracy and reduce the risk of random error, leading to more dependable results. Proper sampling methods, such as stratified sampling or accidental, ensure representativeness and minimise selection bias.

Data collection instruments should be valid and reliable, accurately measuring the variables of interest. Using standardised tools or well-validated questionnaires enhances the quality of the research and allows for comparisons across studies.

Statistical analysis is vital in evaluating the robustness and validity of the results. The appropriate use of statistical tests and techniques, along with the reporting of effect sizes and confidence intervals, contributes to the overall quality of the research. Transparent reporting of statistical methods and results allows for replication and verification by other researchers.

The presentation of results should be clear, concise, and aligned with the research objectives. The data should be appropriately summarised, and any borders or possible sources of bias should be acknowledged. The conclusions drawn from the results should support the findings and consider the study’s limitations.

Further considerations for excellence assessment include ethical considerations, such as protecting participant confidentiality and obtaining informed consent. The funding sources and conflicts of interest should be disclosed to ensure transparency and minimise potential biases.

**Conclusion**

Evaluating primary quantitative research articles, incorporating feedback, and assessing research quality are essential to evidence-based practice and improvement projects. The "Literature Evaluation Table," supported by the "Levels of Evidence in Research" chart and the "Criteria for Acceptable Research," provides a comprehensive framework for evaluating the quality and relevance of primary quantitative research.

Reflective thinking plays a vital role in receiving and incorporating feedback. By nurturing an objective and open mindset, reflective learning enables individuals to espouse feedback as an opportunity for growth and improvement. Reflective thinking lets individuals critically analyse their work, recognise areas for improvement, and effectively implement recommended changes.

The criteria to determine the quality of primary quantitative research articles cover several aspects, including study design, sample size, data collection methods, statistical analysis, results, and conclusions. These criteria ensure the research findings' reliability, validity, and generalizability, enabling evidence-based decision-making and advancing practice improvement initiatives.

By understanding and applying these ideas, healthcare professionals can enhance their ability to critically evaluate research, receive feedback constructively, and contribute to evidence-based practice and continuous quality improvement.

***References to Literature Evaluation Table;***

Research Methods in Psychology: Evaluating a World of Information by Beth Morling:

Book: <https://www.amazon.com/Research-Methods-Psychology-Evaluating-Information/dp/0393617548>

This book covers various aspects of research methods, including quantitative research evaluation and quality assessment.

Critical Appraisal Skills Programme (CASP):

Website: <https://casp-uk.net/>CASP provides tools and resources for critical appraisal of research studies, including checklists and guides for assessing the quality of quantitative research.

Centre for Evidence-Based Medicine (CEBM):

Website: <https://www.cebm.net/>

CEBM offers resources and training on evidence-based medicine, including critical appraisal tools for quantitative research.

The National Institutes of Health (NIH) - Study Quality Assessment Tools:

Website: <https://www.nhlbi.nih.gov/health-topics/study-quality-assessment-tools>

The NIH provides a collection of study quality assessment tools that can be used to evaluate the quality of quantitative research studies in various fields.

The Joanna Briggs Institute (JBI):

Website: <https://joannabriggs.org/>

JBI offers resources and tools for evidence-based practice, including checklists and frameworks for critically appraising research studies.

The Critical Thinking Community - Reflective Thinking:

Website: <http://www.criticalthinking.org/pages/reflective-thinking-synthesis-analysis-and-evaluation>