

Preface

Introduction

Assessment not only measures learning, but it also contributes to learning. To improve the quality of instruction, assessment is often used as a building block. However, applications of traditional-based assessment do not always meet the needs of the online environment. In turn, most research on assessment in distance education recommends a multilevel approach for evaluating instruction. Many educators do not know how to develop such assessment strategies or, if they can, indeed accept the validity of such measurement. Issues associated with developing valid and reliable assessment tools, challenges regarding the accessibility and legality of such tests, and matters of securing and proctoring exams all arise when one discusses topics on online assessment and measurement. For this reason, it is valuable to begin this series with a book that not only addresses the foundations of developing effective online assessment and measurement, but also identifies the potential challenges that educators may face in using assessment tools.

Existing Research and Information

Although there is a great deal of journal literature on online assessment and measurement, most books on the topic are somewhat limited in scope and offer only a general overview of the topic. Most of the information on assessment and measurement of student learning outcomes is focused on traditional-based educational practices. In some instances, there are attempts to create parallels between the traditional-based and online environments, but the applications are often generalized and do not adequately meet the needs of both students and educators. At present, in terms of book literature, most information about subjects pertinent to online assessment and measurement is found in chapters on computer based testing (CBT). Although this information provides important resources in terms of design and delivery of such testing, it does not often address other matters of concern that educators believe are equally important.

Of the titles currently available, there are only a few that provide a comprehensive overview of the subject. Two of the better resources on this topic include *Assessment Strategies for the Online Class: From Theory to Practice* (Anderson, Bauer, & Speck, 2002) and *Computer-Assisted Assessment in Higher Education* (Brown, Race, & Bull, 1999). Anderson's text focuses on the types of assessment strategies that educators can employ in their online courses and offers suggestions on how to use these assessments. Whereas the individual chapters of the book may mention some of the challenges in using these specific assessment strategies, they do not provide solutions for such issues.

Brown's text provides more of an overview of the issues associated with online assessment and measurement but only in the context of computer-assisted assessment (CAA). Other texts, such as *Developing and Implementing Assessment of Student Learning Outcomes* (Serban & Friedlander, 2004) examines assessment in both traditional and online formats. Although this book is useful for gaining a general understanding of the issues often associated with assessment practices, its discussion on the online format and the examples used are not very detailed. Finally, other books are simply too dated, such as *Technology Assessment in Education and Training* (Baker & O'Neil, 1994). Although this book offers a general overview of the subject, more up-to-date information is needed. In fact, many of the books available for review offer dated information about assessment tools educators no longer use.

Topics of Discussion

Online Assessment and Measurement: Foundations and Challenges is divided into four sections that focus on and outline important topics in online assessment and measurement. The objective of this book is to provide readers with a clear understanding of the foundations and challenges of designing, developing, and delivering online assessment and measurement. The book also provides readers with explanations and solutions for issues associated with the accessibility, security, and legal ramifications of online assessment.

Section I focuses discussion on the complexity of defining online assessment. Each of the authors offers perspectives of interpreting assessment and defining standards for effective practices in developing models. This section begins with Jeannette M. Bartley's chapter, a literature review of the most current research articles written about online assessment and measurement. Through her analysis, Bartley not only provides a thorough introduction to the key concepts and issues of online assessment and measurement, but is also able to develop a conceptual framework for understanding the dominant philosophies, trends, and perspectives of online assessment and measurement.

In Chapter II, Betty Bergstrom, Jim Fryer, and Joel Norris discuss the evolution of online assessment in adult education and why these practices require clear definitions. This chapter defines the types of assessments most commonly used in adult testing and explains the strengths and weaknesses of these types of assessments and their applications. This chapter gives a good overview of the process of establishing testing formats.

Eric Shepherd of the Questionmark Corporation presents a detailed overview of the response from industry in Chapter III. In his discussion, Shepherd describes the process by which standards are formulated and why standards must be developed in terms of designing reliable tools for assessment. Shepherd also provides an overview of the primary developers and leading standards. Understanding how assessment is defined by its industry proves informative and useful to educators interested in the rationale behind development.

Section II focuses on the best practices in designing online assessment. This section addresses strategies to ensure consistency and accessibility in assessment; it also examines specific tools that are used. In Chapter IV, Chris Morgan and Meg O'Reilly outline the 10 key qualities of assessment online, and offer a detailed overview of the best methods for educators to employ when designing, developing, and delivering online assessment. Morgan and O'Reilly base their discussion on an examination of the research of proven models and practices. Their research articulates the most important values and practices educators should consider when developing online assessments. Their analysis also identifies ways in which educators can modify traditional testing practices for an online context.

Chapter V, by Sandra J. Thompson, Rachel F. Quenemoen, and Martha L. Thurlow, is an important discussion on the issues educators and administrators should consider when developing accessible online assessments. The authors begin by describing the various challenges in developing universally designed assessments and technology-based accommodations for learners with special needs. The chapter explains how universal design principles can be applied to the features of online assessment and alerts educators to the complexities that special learners experience when completing an online assessment. The authors conclude by offering suggestions to improve existing online assessment tools and the accommodations for such tests.

The last chapter in this section, Chapter VI, focuses specifically on the best strategies for using online discussions as part of a course assessment. Katrina A. Meyer provides a thorough literature review of all the current research related to best practices, assesses online discussion, and develops a model for educators to consider in the application of their online courses. Meyer distinguishes the differences between face-to-face interactions and online discussions and then demonstrates how educators can use the data from online interactions to improve the overall quality of teaching and learning in the course.

Section III details the challenges in online assessment and measurement that administrators and educators may face when developing and using online assessments in the classroom. In Chapter VII, Clark J. Hickman, Cheryl Bielema, and Margaret Gunderson discuss the importance of developing a comprehensive system for designing, developing, and delivering online assessment or evaluation. The authors first clarify the parameters of student and program evaluation, noting the process that educators should follow. The authors offer a systematic model for selecting the right assessment tool for the right environment. The chapter identifies the specific challenges that occur during the process of designing an effective assessment strategy.

Richard Schuttler and Jake Burdick reinforce the idea of creating a systematic assessment strategy in Chapter VIII. They begin by discussing the modalities of online education and explain why a different approach for assessing learning in an online environment is needed. Using the University of Phoenix as their model, Schuttler and Burdick demonstrate how a unified system of assessment can be applied across disciplines by outlining a step-by-step process. The authors use the business program to illustrate their model and to demonstrate how unification begins by designing a comprehensive structure and consistent curriculum. The authors explain how this model can be applied and integrated.

Chapters IX and X both focus on the legal implications of online assessment. In Chapter IX, Bryan D. Bradley offers a straightforward discussion of the legal issues that educators may face when using online assessments. He describes specific legal issues that arise in online assessment and outlines the core criteria for creating legally defensible exams. Bradley also explains how legal issues can influence the reliability and validity of testing. This chapter also provides important information for establishing secure testing and for preventing unfair bias in testing.

In Chapter X, Robert R. Hunt's analysis focuses on the legal issues that affect test developers. His chapter begins by examining how test developers can ensure the copyright of tests and assessment. This chapter also examines whether online assessment can satisfy the legal thresholds for security necessary to secure test copyright and trade secrets. The chapter provides examples in the professional certification context and notes why legal practices in assessment are important. Hunt also explains in detail the legal rights test developers have in the distribution of their assessments. Hunt concludes with an analysis of how various trade-secret laws have been applied to online assessment.

Chapter XI is perhaps one of the most thorough discussions of the issues associated with providing accommodations and ensuring validity for test takers with special needs. Eric G. Hansen and Robert J. Mislevy begin by giving a detailed overview of developing accessible designs for assessments but then raise the question of how accessibility features may undermine the validity of specific tests. This chapter explores in detail an evidence-centered assessment design (ECD) model as a conceptual framework that can assist in defining the re-

quirements of accessible computer-based tests. This chapter explains how specific features, built in to provide accessibility, can indeed challenge the validity and reliability of the test outcome. The authors conclude by providing research and suggestions to improve accessible designs to meet the challenges of ensuring validity.

Section IV is designed to provide administrators and educators with strategies to secure online assessments. These chapters offer examples of issues that arise in an online context. In Chapter XII, Eric Shepherd, John Kleeman, and Joan Phaup provide a clear method assessing the security for delivering computer-based assessments. The chapter identifies the most common forms of assessment and the security issues that can arise for each specific format. The authors then identify the consequences of not addressing the specific security issues associated with each format and offer suggestions that educators or administrators can use to reduce these security issues. This chapter offers a very illustrative view of how to respond to potential security issues in the online context and proves to be a very comprehensive resource of information.

From the corporate perspective, Jamie Mulkey and John Fremer of Caveon Test Security discuss securing and proctoring online assessments from a corporate view in Chapter XIII. The authors describe how the rise of cheating has affected online assessments. They review the guidelines specific to computer-based testing and note how test developers need to examine the test itself, the authentication of the test taker, and finally, the process that ensures the security of the testing. The authors identify a taxonomy of cheater-types and offer solutions to address security problems associated with each cheating style. The authors conclude by discussing current methodologies being studied to improve test security for high stakes testing.

More specifically, Bernadette Howlett and Beverly Hewett provide an analysis of the literature on securing and proctoring online tests. From their review in Chapter XIV, Howlett and Hewett identify the key components educators must implement to ensure the security of their online assessments. The authors offer a historical overview of cheating and how traditional-based methods can be applied to the online context. The authors offer advice related to improving the instructional design of online assessments as well as technological solutions that educators can employ to ensure greater security. This chapter offers practical advice for educators who want to improve the ways in which their online tests are secured and proctored.

To address issues of academic misconduct, Brian F. Fox explains the role of a university's student services in improving the security of online assessment. In Chapter XV, Fox explains ways in which a student services department could be employed to assist faculty and administrators in ensuring a code of conduct for online assessment and plagiarism. Fox lists various strategies that can be used in conjunction with the course to ensure that students understand the im-

portance of academic integrity in the online learning environment. This chapter is useful to educators seeking ways to reinforce academic codes of conduct in the classroom.

Finally in the last chapter, Boris Vilic and Marie A. Cini discuss the role of user authentication in online assessment and describe effective practices such as systematic course design, the use of portfolios, and the development of academic integrity policies. Vilic and Cini examine the broader context of how technological solutions can be used to improve user authentication. The chapter offers an exploration of the resources readily available and those that are in the process of development. An overview of these tools and how they can be used is given. The authors also explain the legality of using such tools within the context of an academic environment. This chapter concludes with a discussion of both the ethical and legal considerations in ensuring authentication.

Conclusion

There is little doubt that as online programming for education and workforce development training continues to expand, the challenges of online assessment and measurement will continue to be a key topic of discussion. For this reason, it is our hope that this book will give readers a comprehensive overview of the topic and serve as a foundation of material for future exploration. This book defines the topic from several perspectives, outlines the best practices based upon the most current research literature, and identifies the most important challenges that educators, administrators, and test developers face in designing, developing, and delivering online assessment. As the first text in our series of books on this topic, *Online Assessment and Measurement: Foundations and Challenges* offers suggestions and advice from many of the experts in the field and serves as a catalyst for future research of the topic.

References

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