1986

1. Prediction of the Future from the Present: An Introduction

Barbara S. Plake
University of Nebraska - Lincoln, bplake@unl.edu

Joseph C. Witt
Louisiana State University

Follow this and additional works at: http://digitalcommons.unl.edu/burosfuturetesting


This Article is brought to you for free and open access by the Buros-Nebraska Series on Measurement and Testing at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in The Future of Testing by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.
Prediction of the Future from the Present: An Introduction

Barbara S. Plake  
*University of Nebraska-Lincoln*

Joseph C. Witt  
*Louisiana State University*

*The extent of an agent’s capacity for inference, its powers to use a given fact as a sign of something not yet given, measures the extent of its ability systematically to enlarge its control of the future.*  
—Dewey, 1917

Dewey (1917) has encouraged us to nourish and advance our science in two ways. In the most typical way, knowledge advances in an additive sense whereby new information (usually data) is added to what is already known in an existing area of inquiry. A second, less common but nonetheless important method demands qualitative rather than quantitative change in the way we think about problems and the addition of knowledge. In other words, these two alternatives can be summed up by considering the first as looking for new answers to old questions and the second as looking for ways to ask new questions. This book is concerned with both of these approaches of considering the future of testing and measurement.

When a field or endeavor is really understood, it is possible for our future actions to be governed by a knowledge which forces us beyond preconception into a new or renewed awareness of the largeness of possibility (Berry, 1983). Dewey put the notion this way:

A being which can use given and finished facts as signs of things to come, which can take given things as evidence of absent things, can, in that degree, forecast the future; it can form reasonable expectations. It is capable of achieving ideas; it is possessed of intelligence. For use of the given or finished to anticipate the consequence of processes going on is precisely what is meant by ‘ideas,’ by ‘intelligence.’ (Dewey, 1917, p. 21)
Without an overall plan of the desired directions for the future, development and advancement would be relegated to a haphazard status. Such a status is incompatible with the goals of science. Thus, even though advancement may be still possible, an overriding plan is not known or considered by the persons in the positions to be concerned with and potentially responsible for the research and intellectual efforts needed to achieve these advancements and directions. Development and advancement of a field is not so much the desired outcome of research and effort as the concentration of the activities or research and effort to identified goals and objectives. Advancement by goals and objectives requires a focus not only on the current status of the field, but also of the needed directions for the field. Also, by considering the probable directions of the field, undesirable but likely outcomes might be identified. It may then be possible to devise a plan to change the present path and thereby avoid or diminish the impact of this undesirable outcome. Therefore, preparation and preplanning by conscious effort may, in fact, alter the directions of the future.

Authors of the chapters which follow were charged with two tasks. First, to summarize the present state of their respective fields in an additive sense and then to use this information to make informed predictions. In doing this analysis many of the authors also identified new questions which heretofore had not been asked.

The overriding purpose of this volume of the Buros-Nebraska Series on Measurement and Testing is to provide a vision of what may be probable directions for the field of measurement and testing. Through the collection of chapters which address a variety of dimensions of the future of testing, it is possible to identify areas of present concern and to identify potentially important areas for dedication of energies in the future.

OVERVIEW OF THE CHAPTERS

The chapters of this volume are organized into three major sections: (1) Theoretical and methodological directions; (2) Educational and academic/professional directions; and (3) Clinical, counseling and organizational directions. Therefore Section I contains chapters that address some of the major theoretical issues and methodological concerns and advancements that are expected to have a dramatic impact on the future directions of measurement and testing. Section II applies some of these advancements and areas of needed theoretical development to the applied areas in educational and academic/professional settings. Then, Section III again looks at the applications of the theoretical and methodological concerns and directions but in this case considering how they apply to the areas of clinical, counseling, and organizational psychology.
Section I: Theoretical and Methodological Directions

The chapters that comprise Section I address two very important theoretical and methodological advancements which promise to have a major impact on the future of measurement and education. The first chapter, “Testing Old, Testing New: Schoolboy Psychology and the Allocation of Intellectual Resources,” is authored by Gene Glass. His chapter provides the measurement field with the challenge of bringing psychology closer to the heart of psychological and educational measurement. Echoing the concerns and directions voiced of Glaser (1981), Dr. Glass recommends that the measurement field take a closer look at the whys of testing rather than concentrating exclusively on the psychometric hows of measurement and testing.

The other chapter in Section I, “Computer Technology in Testing” by Gale Roid, focuses on the technological advancements in measurement related to the integration and utilization of computers, both mainframe and micro. The chapter identifies probable uses of the computer in test development, administration, score reporting, interpretation, and utilization. Viewing computers as probably the most pervasive technological advancement in measurement and testing, Roid identifies both areas of promise and problems related to the incorporation of computer technology in the test development and utilization process.

Together these two chapters make a unique combination. Glass’s chapter focuses on the theoretical underpinnings of test development and test utilization while Roid’s chapter focuses almost exclusively on the methods of test development and test utilization made potentially possible by computer technology. Therefore, these two chapters address issues of both the whys (Glass) and the hows (Roid) as they relate to the future of measurement and testing.

Section II: Educational and Academic/Professional Directions

The three chapters in Section II address the future of measurement and testing in the areas of educational and academic/professional settings. The first of these chapters is authored by Nancy S. Cole, Chapter 4: “Future Directions for Educational Achievement and Aptitude Testing.” In her chapter, Dr. Cole reviews current issues and trends in educational and aptitude testing, focusing on theoretical and technological issues. After establishing a foundation upon which to make reasonable predictions for future directions, Dr. Cole addresses how some of these recent theoretical and technological advances may influence the directions of the future of measurement and testing. In particular, Dr. Cole identifies theoretical developments in the conceptualization of intellectual processing (e.g., Messick, 1984; Sternberg, 1984) and technological advances in computerized testing as potent areas for future impact on the field. Dr. Cole concludes her chapter with a glimpse into a classroom of the future which incorporates these theoretical and technological advancements.
Chapter 5 of the volume is authored by Dr. Ronald A. Berk and continues on the theme of the future of measurement and testing in educational settings, "Minimum Competency Testing: Status and Potential." Dr. Berk’s chapter addresses the potential future developments for minimum competency testing in the field of education. Consistent with the structure found in Dr. Cole’s chapter on aptitude and achievement testing in education, Dr. Berk begins his chapter by addressing the current status on minimum competency testing, identifying a number of theoretical and technological problems which need to be remedied in the future. Dr. Berk identifies the Revised Joint Technical Standards for Educational and Psychological Tests (1985) as one major source of future impact on minimum competency testing in educational settings. In addition, Dr. Berk suggests several directions for future research which will be aimed at solving some of the technological and theoretical concerns for Minimum Competency Testing.

The third and final chapter in Section II addresses the application of testing to the area of licensure and certification examinations: "The Future of Testing for Licensure and Certification Examinations." Michael T. Kane considers the utilization of examination results for licensure and certification for professional fields such as medicine and law. In his chapter he points to several unique theoretical and technical problems and issues which impact on testing for licensure and certification. A major contribution of Dr. Kane’s chapter is the integration of legal and procedural issues and concerns into a research agenda for the future.

Together the three chapters in Section II of the volume, then, address the application of many of the theoretical and technological concerns and advancements identified in Section I by Glass and Roid. All three authors of Section II reemphasize the need for theoretical development in measurement. In addition, these three authors provide specific technological applications of computers to their respective areas within educational and academic/professional assessment.

Section III: Clinical, Counseling, and Organizational Directions

The four chapters in Section III of the volume continue to address the future of measurement and testing but in this case these chapters focus on the areas of clinical, counseling and industrial assessment.

Section III begins with Jay Ziskin’s chapter on the "Future of Clinical Assessment." Describing the current status of clinical assessment as paradoxical, Ziskin asserts that on the one hand evaluations performed by clinical psychologists are under attack from experts, the courts, and even the general public. On the other hand, the vast majority of employers and university training programs place a heavy emphasis of knowledge of psychological testing. In reviewing the current status of clinical assessment, Ziskin describes a number of formidable
problems which are now facing clinical practice including the lack of an empirically validated knowledge base, the lack of an adequate classification system (i.e., DSM-II), and the presence of test bias in numerous instruments. Despite the rather gloomy present state of affairs, Ziskins’ projections see hope for the future of clinical assessment. This hope stems from Ziskins’ projections for a future where clinicians will see an increased use of computers, will utilize a new diagnostic classification system, and will have a better developed research base so that assessment can be better utilized for planning treatment.

Although technically a subspecialty of clinical assessment, the rapidly evolving area of neuropsychological assessment was allocated an entire chapter in this volume because of its current preminence and future promise. Raymond S. Dean’s examination of this area begins with an overview of various systems of neuropsychological assessment classified along a qualitative-quantitative dimension. Research in the neurosciences has helped to elucidate brain-behavior relationships and is increasing the degree to which we can draw valid inferences from neuropsychological test data. Because physical diagnostic techniques are replacing neuropsychological diagnosis in some areas, Dean suggests that a major challenge for the future is the use of assessment data to predict and facilitate adaptation of the neurologically impaired.

In Chapter 9 John Holland provides an overview of interest testing and suggests the field is wrestling with four important issues: (a) How to make inventories available to more clients versus the maintenance of professional standards, (b) How to create inventories with more valid, influential, and satisfying effects, (c) How to insure equity in testing, and (d) How to integrate interest testing with other interventions. It is concluded that none of these problems is resolved easily. Accordingly, Holland recommends a number of areas which require careful scrutiny and research. The proximal goals center around improving the psychometric characteristics of the various scales and studying consumer satisfaction with interest inventories. Holland suggests this research may lead us to the development of inventories which are more practical and which emphasize inventories as interventions.

Finally, Mary Tenopyr describes the many difficulties which influence measurement in work settings. According to Dr. Tenopyr, a primary cause of these difficulties stems from a lack of knowledge on the part of employers who are responsible for implementing and evaluating a testing program. For the future, she suggests an education and research program for employers which would emphasize a reconceptualization of validity, the development of an appropriate system of constructs, clarifications regarding the process of job analysis, development of performance measurement techniques which are both easy to use and reflective of actual job performance, the development of alternatives to paper-pencil tests (e.g., interviews, work samples), and clarification of differential prediction providing for a melding of theory and data. The majority of the chapter is organized consistent with a reconceptualization of validity.
The chapters in Section III each identify a relatively homogeneous set of
current problems. Each emphasizes the need for increased emphasis on test
validity. More specifically each seems to be much in line with the theme initiated
by Glass in Chapter 2: that testing should be tied more closely to theory than to
pure psychometrics and that tests should serve the consumer to a greater extent.
Each of the chapters serves to guide future endeavors by specification of the
probable courses their respective fields may take. It seems clear that computers,
the reduction of test bias, and research directed toward improvement of test
validity will be in the measurement future.

CONCLUDING COMMENTS

The field of testing and measurement is a conservative science. New answers to
old questions continue to accumulate. Still, many answers have not proved
satisfying even to the measurement community, much less to the lay public. At a
time when psychometricians are asking increasingly sophisticated questions
about the technical properties of tests, some critics are wondering aloud whether
tests should be utilized at all. The contributions of the chapters in this volume
cause us to imagine a future which is the synthesis of all that is good, and some
of what is bad, in the present condition of measurement. Whether this future is
reasonable, of course, is problematic; new problems loom on the horizon of the
new theories and technologies. However, to the extent that the process of ad­
vancing the science of measurement and testing is in fact influenced by what is
good and bad about the present, we shall witness a future which is, in Dewey’s
words, “intelligently constructed.”

REFERENCES

and Co.
dynamic cognitive structures. In B. S. Plake, (Ed.), *Social and technical issues in testing:
Implications for test construction and usage (Buros-Nebraska symposium on measurement and
S. Plake, (Ed.), *Social and technical issues in testing: Implications for test construction and usage
(Buros-Nebraska symposium on measurement and testing)* pp. 39–60. Hillsdale, NJ: Lawrence
Erlbaum Associates.