Interdisciplinary Education in the Age of Assessment

Edited by
David M. Moss • Terry A. Osborn • Douglas Kaufman

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Interdisciplinary Education in the Age of Assessment addresses a prevalent need in educational scholarship today. Many current standards-driven curricula follow strict subject-specific guidelines, leaving educators little room for interdisciplinary innovation. This book gears itself toward developing assessment models specific to interdisciplinary education, positioning itself as a seminal volume in the field and a valuable resource to educators across the disciplines. Each chapter covers a major subject area (literacy, science, math, social studies, bilingual education, foreign language, educational policy) and discusses methods of assessing integrated/interdisciplinary curriculum and instruction.

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From David – for my parents, Michael and Carol Moss
From Terry – for Jennifer, Kevin, and Kelly
From Doug – for Judy, Paul, and Lisa

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Preface

This book affords the reader a contemporary perspective on curriculum, learning, and accountability beyond the overly narrow and prescribed lens of single-subject standardized testing that has dominated our profession for too many years. Recent trends in assessment have habitually demanded that educators refine and reduce curriculum into the smallest possible elements to facilitate the generation of corresponding test items. Further compounding the issue, the resulting veneer of accountability drives everything from professional preparation of teachers to local real estate values. Reversing this dangerous trend, this book presents a fresh and timely perspective on assessment and interdisciplinary learning and teaching.

Intended for reform minded K-16 professional educators who are seeking theory supported strategies to counter the madness of poorly conceived curriculum and assessment models, which serve neither our students nor society, this book offers comprehensive and compelling vignettes and research about learning environments which break the bounds of traditional disciplines. Acknowledging that most educators are well steeped within a discipline and that curriculum is organized in this fashion, we take a realistic approach to this topic by framing this work from the starting point of familiar content areas which are central to most of our work. Our final chapter offers readers a practical guide derived from our interpretation of the contributors' work to aid in the development of assessment systems which promote interdisciplinary and transdisciplinary inquiry in the classroom.

Our first chapter, which was developed by the Editors, *The Promise of Interdisciplinary Assessment*, frames the ideas underpinning this book by

acknowledging that we are in the throes of a profession driven by policies obsessed with assessment. Citing various national standards across the disciplines, it frames the ideas underpinning this book.

In Chapter 2, *Assessment is Not a Dirty Word: Measuring Knowledge, Attitudes, and Behaviors in Interdisciplinary Learning Environments*, Scott W. Brown presents a three-pronged assessment approach for interdisciplinary learning environments within which educators at any level can conceptualize assessment, and its role and value in education. Additionally, he advocates that teaching and learning should be guided by the instructional design and curriculum goals, not the assessment. He hopes to convince you that "assessment" and "test" are, in fact, not dirty words.

In our third chapter, *Assessment as Process: Transdisciplinary Self Evaluation from a Writer's Point of View*, Douglas Kaufman draws on concepts developed within the disciplines of writing and writing instruction to place assessment – and self-assessment, in particular – at the center of the act of learning. He argues that if the purpose for transdisciplinary studies is to engender a more holistic, useful concept of the world through a richer, more multifaceted exploration of it, then assessment should be at the heart of that exploration – and, in fact, an exploration itself. He concludes the search for the answers to profound questions and our definition of assessment become, in effect, one and the same.

Following, David M. Moss, John Settlage, and Catherine Koehler present *Beyond Trivial Science: Assessing Understandings of the Nature of Science*, in which they argue science education is still dominated by a coverage of content mentality supported by simplistic recall assessments. They contend all citizens should develop informed scientific perspectives while embracing a willingness to engage in social discourse necessary for a free and open society. They denote *Science for Democratic Participation* and *Science for Promoting Quality of Life* as essential constructs for promoting literacy in science.

In *Re-Solving the Tension Between Interdisciplinarity and Assessment: The Case of Mathematics* Jean McGivney-Burelle, Katherine McGivney, and Jane M. Wilburne discuss the challenge of preparing students to know and understand mathematics, and to be able to apply mathematical knowledge within and beyond the discipline. They advocate for learning opportunities which stretch students' basic understandings, encourage them to make cross-curricular connections, and ultimately solve real-life problems. They conclude that applying and assessing mathematics in interdisciplinary settings offers opportunities for genuine learning and understanding to take place.

In Chapter 6, *Hello Dolly!: Interdisciplinary Curriculum, Authentic Assessment, and Citizenship*, Alan S. Marcus argues that citizenship education is

at the core of social studies, and of education more generally, and that the creation of interdisciplinary curricula with authentic assessments are best suited to support the goals of citizenship education. He presents two possible scenarios in which citizenship education could play out in classrooms and notes that although various standards and curricular guidelines may include citizenship education as an important goal, these goals may not trickle down into daily classroom activities. He invites readers not to shy away from this challenging work.

Terry A. Osborn authored *Language Learning as an Interdisciplinary Endeavor* in which he argues interdisciplinary work in world languages provides students with opportunities to examine the social and cultural worlds that they shape and are shaped by, specifically as it relates to language diversity and can be effectively utilized in a critical approach to language education. He concludes that although world language educators have often anecdotally thought of the work they do as inherently interdisciplinary, the ability of language educators to explicitly articulate criteria that move beyond those currently in use in the profession will likely prompt more sophistication in this area—and there is much work to be done.

In Chapter 8, *Rethinking Our Focus on the Future: Reading Assessment in the Transdisciplinary Secondary English Classroom*, Wendy J. Glenn argues that assessments are tied needlessly to reading skills. She advocates for student choice in the English classroom where students are encouraged to develop meaningful questions and pursue answers across a variety of texts. She concludes that this approach will promote student engagement in reading and support their preparation for district and state exams—but most importantly, it will foster love for reading.

Following, Mileidis Gort presents *Transdisciplinary Approaches to Bilingual Student Assessment: Creating Authentic Reflections of Meaningful Learning Opportunities* in which she discusses the problems and short-comings related to monitoring bilingual student achievement and progress through current standardized testing practices. She offers a framework for assessing bilingual learners which adopts a multilingual, transdisciplinary perspective. She concludes that by addressing bilingual learners' unique characteristics, including systematic and multiple types of assessments of language proficiency and academic achievement, transdisciplinary approaches to bilingual student assessment are more likely to yield authentic reflections of bilingual learners' knowledge and understandings.

In Chapter 10, the first of two summative chapters, titled *Interdisciplinary Assessment: A System at the Heart of Teaching and Learning across Domains*, Jacqueline Kelleher speaks to issues of assessment broadly from a programmatic perspective. She offers clear, concise, and practical recommendations for assessment at a variety of levels. She concludes that effective assessment

models which make goals, objectives, and anticipated outcomes readily understood lead to the development of greater collaboration, stronger programs, and enhanced opportunities for learning.

In our concluding chapter, *In Praise of Complexity* by Douglas Kaufman, David M. Moss, and Terry A. Osborn, we cite the diverse perspectives offered in this contributed volume and make specific recommendations for considering assessment beyond the boundaries of traditional disciplines.

Acknowledgments

We are grateful to the contributors and reviewers of this text. Naomi Silverman has been, as always, very supportive throughout all aspects of the long process of bringing this manuscript from merely an idea to reality. Our colleagues in the Department of Curriculum and Instruction at the Neag School of Education at the University of Connecticut have been very encouraging as well. Specifically, we want to thank Wendy Glenn and Tom Levine for their assistance in developing this manuscript. And finally, we thank our families for their patience and unwavering support during an often time-consuming process.

CHAPTER 1

The Promise of Interdisciplinary Assessment

DAVID M. MOSS, TERRY A. OSBORN, and
DOUGLAS KAUFMAN

This is the age of assessment.

This authoritative message dictated to professional educators is abundantly clear, even to those who have historically shunned such utterances. It seems that somewhere along the way in recent years standardized testing came to be synonymous with assessment for many high ranking public officials—some well-meaning, some cynical and politically motivated—and they piled more and more standardized tests upon the desks of educators and their students. We assert that these tests, ostensibly designed to evaluate the academic competence of students and hold those who are failing our children accountable for their actions, rarely succeed in their intent.

There are a variety of reasons why we contend that current narrowly defined assessment practices are rarely worth the massive effort and cost. At present, the very nature of many standardized tests necessitate that the learning to be evaluated is narrow and often superficial. Thus, we evaluate the simple things—recall answers that can be summed up by a penciled dot on a bubble sheet or perhaps essays characterized by their number of paragraphs rather than by the quality of ideas. The limited assessment structures currently dominating public education have little room for evaluating anything but the finished products of students' academic endeavors. Rarely do we find any interest in analyzing students' progression of learning, their abilities to uncover and make sense of disparate

information, to make multifaceted meaning from diverse perspectives, and use such knowledge to make constructive changes in their lives and in their world.

As colleagues, for many years we passively yearned for a time when assessment was characterized by broader, more inclusive notions. Then, in the spirit of scholar activism spurred on by the tenacity of what we considered overly prescriptive policies, we aimed to develop a manuscript which might serve as a catalyst to once again broaden the discourse and practice of assessment. We are not looking back. We don't aspire to return to a supposed simpler time in education, especially when research tells us how complex issues of assessment typically are. Moving forward is our principal aim. Perhaps the notion of moving beyond the current state of affairs is more appropriate given that this book stems conceptually from one that we published several years ago, titled *Beyond the Boundaries* (2003). Our deep concerns about the current nature of assessment policies and practices have compelled us to examine assessment by revisiting it within the context of another topic of interest: interdisciplinary studies.

In our previous book, we were motivated by a concern that the concept of interdisciplinarity, in terms of curriculum, was grounded in the tacit belief that the individual discipline was the sole authoritative origin for beginning a process of inquiry. We asserted that the creation of artificial boundaries around traditional disciplines often results in curriculum concerned exclusively on the learning (and quite frequently the subsequent forgetting) of discrete subject matter. We strived to establish a view of integrated learning, as underpinned by the recognition that knowledge itself is not bound by disciplines, and we furthered the concept of *transdisciplinary* learning. We defined the term "discipline" not as a set of content area facts, but as a lens through which we examine phenomena. Each discipline affords the learner different viewpoints and a potentially different set of learning tools as well as subject matter material to be explored. One of us argued:

> [T]ransdisciplinarity works to remove the notion that certain content matter is necessarily *owned* by any particular discipline, and we do not engage in transdisciplinary studies to meet outside requirements that identify exposure to specific content as the primary goal. Our goal is to find a problem or idea worth studying and bear the visions of multiple perspectives upon it in order to understand it more fully than if we were to observe it from a single vantage point. This understanding inevitably leads to content learning: in the process of using the disciplines in the same ways that a discipline expert would use them to view the world, students

> and teachers learn the content that attracted subject-area scholars to the discipline in the first place. However, the larger payoff is that students know how to *use* the content to continue to grow.
> (Kaufman *et al.*, 2003, p. 158)

This conceptualization has powerful implications for assessment. By redefining a discipline as a way of learning (influenced by the subject matter traditionally associated with it) we are, in effect, placing assessment at the center of the learning act rather than at the periphery, where it looks at products completed only after inquiry has ceased. We are now concerning ourselves with learning the viewpoints of the discipline, the attitudes of the discipline, the culture of the discipline—the *nature* of the discipline—as much as we are concerning ourselves with the subject matter traditionally bounded within. The discipline as a way of learning becomes an act of assessment in and of itself: we continually assess ourselves and others, from the genesis of one learning endeavor to the start of subsequent endeavors to which it gives rise, we assess the evolving answers to the questions we have posed, the new questions themselves, and we monitor our learning processes while they are current. We focus on how to use the discipline as much as on the learned particulars themselves, which are traditionally the only element being tested in today's climate.

Because of our nascent conception of transdisciplinary studies essentially eliminating many definitional barriers between learning and assessment, in this book we return to the disciplines as an organizational framework, asking leaders in particular fields to help us extend our examination of assessment, its current role in an interdisciplinary milieu and its potential for redefining and expanding the act of learning in formal schooling.

Given the high-stakes nature of standardized tests, often upon which student promotion is considered and/or local property values are established, there exists a moral imperative to act on behalf of our students and their communities. In short, we propose this age of assessment is undermining and perhaps even damaging public education, forcing schools to concern themselves only narrowly with what is learned and not at all with how and why it is learned. Such a model makes it easy to generate hollow numbers that we can eagerly watch rise and fall with annual reports, but it does little for promoting actual learning. In short, we are assessing the wrong things for the wrong reasons.

Our belief in the merit of this book lies in the reception our previous one received. It prompted lively discussions at scholarly conferences, and we were struck by how many attendees reiterated at least a rhetorical support for interdisciplinary curricula. Most practitioners, however, were candid in their comments, "How are we supposed to try something like this when these

standardized tests are breathing down our necks?" If one looks to the literature on interdisciplinary curriculum, it is difficult indeed to find helpful guidance. Ackerman's criteria for assessing an interdisciplinary curriculum (1989), which include validity for, within, and beyond the disciplines, hold up quite well for evaluating the curriculum itself, but not necessarily for considering student performance or growth. If, as we agree with Ackerman, a good interdisciplinary unit has a "metaconceptual bonus" (p. 29)—an intellectual payoff that is greater than that of the sum of its parts—we argue that the vast majority of standardized exams are not nearly comprehensive or sophisticated enough to capture this holistic, multifaceted payoff and its ultimate inherent potential to jumpstart further learning.

So then, how do we assess? If we suggest that interdisciplinary curricula offer important, positive contributions to student learning, how do—and how should—teachers discover and document evidence that the interdisciplinary activities add any value to the students' learning experiences? When published national standards for the fields of mathematics, language arts, foreign language, science, and social studies mandate that the curriculum provides interdisciplinary connections (see Table 1.1), how do we know if students understand and benefit from those connections? How do we evaluate the capacity for new interdisciplinary understandings to stimulate further social and intellectual growth? These questions provided an impetus for the work.

We invited our contributors to take part in our ongoing interdisciplinary discussion. We chose colleagues and educators whom we recognize share our commitment to working across disciplinary divides, and who understood that theory decontextualized from the world of the working classroom has little relevance. Several of these chapters offer assistance that is *immediately* practical, suggesting topics, approaches, and techniques that might be applied in the classroom today. Other chapter discussions do not lend themselves to automatic classroom application; however, all concern themselves with the idea that theory and practice are inextricably intertwined and that educational reform—interdisciplinary and otherwise—relies on improved classroom practice.

As with our first book, we struggled with whether or not to cast these chapters through the eyes of those who define themselves so much through their individual disciplines. If, as we have speculated, any discipline is defined by boundaries that are arbitrary, are we condoning arbitrariness by having subject experts weigh in? Ultimately, we rejected that notion. Reminding ourselves of our definition of a discipline as a learning lens, we asked each contributor to cast her or his own lens on the topic of assessment in the interdisciplinary curriculum. Their beliefs and conclusions are not always in agreement, nor should they be. Instead we view the sum of their

TABLE 1.1 Outline of national standards which mandate interdisciplinary connections

Standards documents	Select examples of standards that support interdisciplinary learning
National Council for the Social Studies: *Curriculum Standards for Social Studies: Thematic Strands*	• "Social studies programs should include experiences that provide for the study of relationships among science, technology, and society" • "Social studies programs should include experiences that provide for the study of connections and interdependence"
National Council of Teachers of English/International Reading Association: *Standards for the English Language Arts*	• "Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment"
National Research Council: *National Science Education Standards*	• "Connecting science to other school subjects, such as mathematics and social studies" • "Learning subject matter disciplines in the context of inquiry, technology, science in personal and social perspectives, and history and nature of science"
National Standards in Foreign Language Education Project: *Standards for Foreign Language Learning in the 21st Century*	• "Students reinforce and further their knowledge of other disciplines through the foreign language"
National Council of Teachers of Mathematics: *Principles and Standards for School Mathematics*	• "Instructional programs from pre-kindergarten through grade twelve should enable all students to recognize and apply mathematics in contexts outside of mathematics"

viewpoints as an opportunity to learn about assessment from a richer, more comprehensive, more *transdisciplinary* standpoint. As will be addressed in the summative chapter, these authors tender two key themes, the harsh reality of narrowly defined standardized testing predominant in schooling today along with how they embrace complexity of assessing beyond the boundaries of one's discipline.

Bibliography

Ackerman, D.B. (1989). Intellectual and practical criteria for successful curriculum integration. In H.H. Jacobs (ed.), *Interdisciplinary curriculum: Design and implementation* (pp. 25–37). Alexandria, VA: ASCD.

Kaufman, D.K., Moss, D.M., & Osborn, T.A. (eds.) (2003). *Beyond the boundaries: A transdisciplinary approach to learning and teaching*. Westport, CT: Praeger Publishers.