Making the Most of

UNDERSTANDING

by DESIGN

John L. Brown

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U N D E R S T A N D I N G

by D E S I G N

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Foreword

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Understanding by Design (UbD) presents a framework for curriculum design oriented toward the development and deepening of student understanding of "big ideas" in content areas. It is *not* a program with an articulated "scope and sequence" of skills or prescribed teaching activities. Thus, it becomes challenging to unearth direct, causal evidence of its effectiveness on student achievement. Nevertheless, the growing use of the UbD framework demands empirical data to guide users and document its effects.

Making the Most of Understanding by Design begins this needed research journey. John L. Brown offers a rich description of UbD users' experiences compiled from extensive surveys. The surveys' findings reflect the "lessons learned" from multiple perspectives, including those of teachers, school-based administrators, district-level supervisors, staff developers, regional service agency staff, and personnel from higher education. The results of the surveys and follow-up telephone interviews are described in richly detailed narratives, supplemented by numerous charts and tables. However, the book provides more than a thorough presentation of data. It offers a synthesis of underlying patterns to guide users in recognizing the most promising practices,

highlighting predictable pitfalls to avoid, and raising questions for further research.

While there is no single pathway to UbD implementation, Brown's research reveals that some actions have proven more robust than others. The insights provided in this book will benefit both veteran and novice users of Understanding by Design.

Jay McTighe and Grant Wiggins

Preface

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In the groundbreaking publication *The Fifth Discipline: The Art and Practice of the Learning Organization* (1990), Peter M. Senge characterizes a "learning organization" as one that demonstrates "metanoia," a capacity for self-reflection and self-examination that results in stakeholders' continuous learning and, in turn, the organization's continuous improvement. Through a commitment to sustained self-evaluation and self-modification based on analysis of achievement data, a learning organization's members can successfully discover what Senge (1990, p. 114) labels "points of leverage"—areas where organizational emphasis can produce the most significant and positive results.

Ideally, both schools and school districts should embody Senge's concept of the learning organization. In light of growing public demand for rigorous standards, accountability-based assessments, and high achievement levels for all students, educators are continually searching for models, frameworks, and exemplars to improve their delivery of services and to develop metanoia, either consciously or unconsciously. This book provides a road map that educators, parents, and community members can use to examine the continuous improvement implications of one such framework, Understanding by Design (UbD) by Grant Wiggins and Jay McTighe.

The data underlying this book emerged from a study organized by the UbD cadre, a group of educators throughout the United States and Canada who work closely with Wiggins and McTighe to ensure quality control of all aspects of Understanding by Design–related professional development, strategic planning, and publishing. Members of the cadre represent ASCD-certified training experts who have extensive experience in curriculum, assessment, instruction, and administration. They represent a wide range of professional settings and responsibilities (from elementary, middle, and high schools to central office and university venues) and reflect a number of geographic regions. Cadre members meet regularly with Wiggins and McTighe to review and share training techniques and strategies; critique drafts of new UbD-related publications; make recommendations for future directions of the framework; and identify exemplary educators, schools, and districts working with Understanding by Design.

This text presents a synthesis of the experiences and recommendations of study participants: educators who have used the UbD model for several years in various settings. Using data gathered from participant questionnaires, interviews, and focus groups, the book explores what high-level users suggest about the following:

• The design principles and strategies explicit in the UbD framework that have the greatest potential as points of leverage in promoting student achievement, staff performance, and organizational productivity gains.

• The implications of long-term UbD use for evaluating and improving standards design, curriculum development, assessment and evaluation, instruction, professional development, and school improvement planning.

• The inevitable problems and pitfalls that accompany the process of organizational change and renewal in educational settings, plus suggestions for addressing them.

• Recommendations to help schools and districts using Understanding by Design extend its application beyond the development of instructional units and into virtually all aspects of the learning organization.

The power of this book, we believe, lies in both the profound experiences of the individuals interviewed and the scope of their backgrounds. They truly represent a microcosm of the education profession. You will hear from teachers successfully implementing UbD in their classrooms, administrators collaborating with their staffs to implement UbD as part of their school improvement planning efforts, district-level leaders such as associate superintendents and supervisors, UbD cadre members, and college and university professors with extensive experience in cross-institutional partnerships involving UbD as a tool for preservice and teacher-induction programs.

Overall, the book is intended to help you assess two major levels of development within your learning organization: (1) strategies, processes, and recommendations for using UbD as a catalyst for school and district renewal and transformation and (2) "big ideas" and "enduring understandings" that can be first abstracted from the experiences of "high-level users" of Understanding by Design and then applied universally to the process of continuous improvement in learning organizations.

Education today is a complex and challenging arena undergoing profound transition and transformation. We hope that this investigation of Understanding by Design will contribute significantly to your individual and collaborative efforts to sustain and enhance the learning organization with which you are affiliated. We also hope that this book stands as a tribute to the brilliant contributions being made to education by the authors of UbD, Grant Wiggins and Jay McTighe.

John L. Brown
Understanding by Design Cadre Member

Introduction

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ESSENTIAL QUESTIONS

1. *How can Understanding by Design help educators address the accountability issues that they face in an age of rising expectations and diminishing resources?*

2. *What lessons have we learned from long-term users of Understanding by Design?*

3. *Beyond unit development, how can Understanding by Design improve the culture and effectiveness of learning organizations?*

For many educators, the new millennium is a time of rising expectations and diminishing resources. We live in an age of high-stakes accountability, when the demand for tangible confirmation of the value of educational innovations is growing, sometimes to a deafening roar. Federal and state governments are experiencing the simultaneous aftershocks of increasing budget deficits and expanding demand for scientific confirmation of the value of specific educational programs and practices. If we are to retain and institutionalize educational initiatives, we must prove their effectiveness.

This book explores one such powerful educational innovation— Understanding by Design (UbD)—and what we know about its implementation, effects, and possible future application. The teachers,

administrators, national trainers, and college and university professors whose voices and experiences are captured here are all high-level users of UbD who have worked closely with its implementation process for several years. They were identified as successful practitioners by Grant Wiggins, Jay McTighe, and other members of the UbD training cadre, and they offered their feedback on the framework through a series of questionnaires. One-on-one interviews and focus groups reinforced initial data patterns and conclusions. These high-level users' analyses and insights represent the beginning of a long-term evaluation process of UbD, as well as a confirmation of its effect on the performance of students, staffs, and organizations.

The experiences of these high-level users, captured through their participation in this study, provide two intriguing and powerful lenses through which to examine this educational design framework. First, what we have learned about teaching for understanding reinforces how best to prepare all students for success in high-stakes accountability testing. Second, although UbD has so far emphasized unit development, high-level users universally affirm UbD's ability to improve the performance of schools in general. They hold that beyond its original purpose as an instructional design tool, UbD can be a powerful catalyst for organizational change, school reform, strategic planning, and continuous improvement.

This book offers a practical summary of insights and advice from high-level users to help you make the most of the UbD framework throughout your learning organization. It is especially useful for two primary audiences: (1) educators who are already working with UbD but need support in expanding and sustaining their efforts to improve student, teacher, and organization achievement and (2) individuals and groups who are new to UbD but can benefit from the lessons learned by such experienced users. Overall, this book provides a running commentary on lessons learned from the first five years of UbD's implementation. It synthesizes emergent themes, issues, and recommendations related to the following core issues:

• Initial training experiences and recommendations, including models and highlights of exemplary professional development programs related to UbD.

• Follow-up implementation strategies, emphasizing techniques for developing a UbD "community of learning."

• Implications of the curriculum design and development framework, including samples of systemic initiatives for curriculum reform that will incorporate UbD.

• Possible assessment and evaluation processes, such as using UbD to address and promote student achievement related to district and state standards and high-stakes accountability testing.

• Instructional strategies that promote student understanding, including lessons learned from differentiated instruction for special populations (gifted and talented, special education, English as a second language [ESL], and the socioeconomically disadvantaged).

• An exploration of UbD as a catalyst for team building, strategic planning, and organization development.

• Implications for preservice education, including UbD's use in colleges and universities, as well as in teacher-induction programs.

• Ideas about UbD's future, including high-level users' recommendations for modifications, additions, and enhancements.

In addition to the essential questions at the start of each chapter, this book's exploration of UbD revolves around the following questions:

1. Why should schools and districts consider adopting the goals and design principles of the UbD framework?

2. How have successful practitioners learned to use UbD to improve student achievement, curriculum, instruction, assessment, staff development, and organizational change?

3. How have those practitioners addressed the inevitable problems and issues associated with the change process and UbD?

4. How can we use UbD principles to build active learning communities?

5. What are the most practical and useful recommendations from successful high-level users for educators who are beginning to work with UbD, including strategies for all phases of implementation?

The following provides a quick overview of chapter content.

Chapter 1, "Implementing Understanding by Design: A Summary of Lessons Learned," provides an overview of the history and design elements of the UbD framework. For new or novice users, this chapter synthesizes key design principles and strategies, as well as UbD's research base. For both new and experienced users, Chapter 1 provides a comprehensive summary of lessons learned, issues cited, and recommendations made by a majority of the experienced UbD practitioners who participated in the study. It explores the recurrent ideas and essential questions posed by high-level users and investigates emergent recommendations, many of which are presented in the practitioners' own words. The chapter closes with the first of the book's nine organizational assessment questionnaires, which are suitable for use as part of school improvement and strategic planning efforts.

Chapter 2, "Designing and Developing School and District Curricula," explores how schools and districts are integrating the UbD framework into curriculum design, development, and implementation. This chapter provides practical advice about maintaining the traditional UbD unit focus while expanding its influence to address all areas of curriculum management. Chapter 2 concludes with a toolkit of proposed guidelines for curriculum developers to use when auditing and revising their curricula, using UbD principles and strategies.

Chapter 3, "Promoting Student Achievement and Addressing State and District Standards," confronts universal issues in educational assessment and accountability. How, for example, can UbD be used to improve student performance on standardized tests and related assessments? How can school staff members use UbD's principles and strategies to help all students succeed, especially those associated with special populations, such as gifted and talented, special education, ESL, and the socioeconomically disadvantaged? Perhaps most significantly, this chapter synthesizes high-level users' reflections on differentiated instruction and how UbD contributes to monitoring and adjusting instruction to accommodate the strengths and needs of individual students.

Chapter 4, "Promoting Student Understanding," examines the instructional implications of the UbD framework, emphasizing how successful practitioners have internalized the strategies and processes implicit in Stage Three's WHERETO template (see Chapter 1, page 19). Using the feedback and examples from successful teachers, administrators, and staff developers, this chapter describes how UbD principles can transform classrooms. The chapter provides useful recommendations related to differentiated instruction. How, for example, can we use a process of continuous improvement in our classrooms? How can we assess individual students' strengths and needs and address them throughout the implementation of standards-driven lessons, units, courses, and programs?

Chapter 5, "Promoting Exemplary Professional Development Programs and Practices," explores the relationship between the UbD framework and successful staff development programs and initiatives. This chapter emphasizes what high-level users have discovered about the best approaches to training and professional development related to successful Understanding by Design implementation. Beginning with a brief discussion of the special needs of the adult learner, the chapter summarizes training pitfalls and problems that result from failing to address participants' desire for meaningful and authentic

experiences aligned with their expressed needs. Next, the chapter investigates how such ideas and processes align with contemporary change theory, including what is known about collaborative work cultures and the idea of continuous improvement as a guiding principle for successful professional development. It closes with a summary of how current electronic resources for Understanding by Design can complement district- and school-based professional development activities.

Chapter 6, "Improving Preservice Training and Teacher-Induction Programs," examines the critical issue of how we can best prepare teachers in preservice situations for success with all learners, particularly within the context of increasingly diverse student populations. Schools and districts face a double-edged sword: replacing growing numbers of retiring teachers while confronting demands for more rigorous accountability and higher student achievement in response to increasingly ambitious standards. This chapter addresses UbD's role in numerous preservice situations and venues, including college and university teacher-training programs and cross-institutional partnerships for professional development. Chapter 6 also describes successful teacher-induction programs in various school systems, with an emphasis on how sustained mentoring and professional development can support greater levels of new teacher retention and success.

Chapter 7, "Facilitating Organization Development, Continuous Improvement, and Strategic Planning," extends the investigation of UbD to the area of improving organizational cultures and the related process of strategic planning and continuous improvement. Every district has a protocol for school improvement planning. Frequently, however, this process is characterized by a top-down or committee-mandated plan that stakeholders too often disregard or misunderstand. Therefore, Chapter 7 examines what UbD implies for successful team building, collaborative work cultures, and institutional re-norming through organization development. It summarizes what experienced users suggest about forming a genuine learning organization that

involves all stakeholders in the process of organizational reform and renewal.

The book concludes with Chapter 8, "Looking to the Future of Understanding by Design," which explores high-level users' views of the hot spots, trouble points, and future trends associated with education in the 21st century. This chapter investigates the relationship between UbD and emergent trends and themes, such as (1) federal and state testing and accountability initiatives designed to diminish the achievement gap and to ensure success for all; (2) the continuing need to improve focus areas such as curriculum, assessment, instruction, professional development, stakeholder involvement, and parent and community outreach; and (3) avenues for making connections and for forging links between the UbD framework and other national education renewal frameworks, such as Robert J. Marzano's What Works in Schools and differentiated instruction, as articulated by Carol Ann Tomlinson in *The Differentiated Classroom: Responding to the Needs of All Learners* (1999). The book ends with a series of vision statements as high-level users discuss the future of UbD in light of their experiences and insights.

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Before you begin your journey through this book, consider two resources. Figure 0.1 summarizes the big ideas cited most frequently by high-level users who participated in the study. It reinforces the universal themes behind the UbD framework, plus the common pitfalls and limitations of the framework that most high-level users have experienced. Figure 0.2 translates those big ideas into the essential questions that experienced practitioners suggest are at the heart of their use of the UbD framework. Ideally, the ideas and questions will help to frame your exploration and understanding of Understanding by Design and help you make the most of the framework within your learning organization.

| 0.1 | **THE BIG IDEAS ABOUT UNDERSTANDING BY DESIGN MOST OFTEN CITED** |

1. Understanding by Design (UbD) is both a framework of research-based best practices and a language for unifying educators' work to promote high levels of achievement and understanding among students. It should not be presented to staff as "one more program to do" because most staff members already feel overloaded with accountability programs and related initiatives.

2. A primary value of UbD is its ability to get educators to identify the core ideas and questions that form the infrastructure of the content or disciplines that they teach. In effect, UbD promotes conversation about what is essential to the curriculum.

3. This focus on underlying concepts and questions provides a tool that educators can use to address the issue of time constraints. By building consensus about what is nonnegotiable for all students to know, do, and understand, they can identify an elegant curriculum that promotes all students' understanding and still ensure time for in-depth inquiry, questioning, and conceptual exploration.

4. UbD requires that its users genuinely know and understand the content for which they are designing a curriculum. For many users, UbD has led to professional dialogue and insight about the purposefulness and universal implications of subjects and programs.

5. The backward design process provides a set of principles that reinforce educators' analysis of accountability standards. By beginning with the end in mind, educators work collaboratively to determine what students should know, be able to do, and understand as students master content and reach performance standards.

6. In these times of high-stakes accountability testing, UbD provides a powerful rationale for expanding assessment repertoires to include performance-based assessments and students' reflections. UbD tools and processes support a "photo album" approach to monitoring student progress, rather than "snapshot" assessment measures based on tests alone.

7. UbD reinforces educators' ability to integrate assessment and instruction, thus leading to genuine differentiation that accommodates the unique strengths and needs of each student. Ideally, Stages Two and Three should be seamless in that teachers should constantly monitor student achievement as they modify instructional and learning behaviors that address a student's evolving strengths and needs.

8. Practitioners seek quantitative data to confirm UbD's value. Longitudinal evaluation studies to determine the effect of UbD implementation on student achievement, staff performance, and organizational productivity must be a major future priority.

9. UbD can and should expand beyond unit development. The next logical phase is for multiple districts to explore UbD's implications for and use in broader systemic curriculum design, development, and implementation. Until participants' unit designs are showcased in context within a district's curriculum, they remain stand-alone products, removed from an organizational context.

10. To this point, several key aspects of UbD have been either ignored or underemphasized and, thus, merit increased attention:

    • The need to create a national database synthesizing student achievement data in schools and districts with high levels of UbD use. Such a database can form the basis for a series of program evaluation studies that will determine the framework's effect.

    • The need to do much more with the connection between UbD and special populations, including gifted and talented, special education, ESL, and the socioeconomically disadvantaged.

    • The need to articulate a relationship between UbD and other widely disseminated initiatives for professional development and school improvement. Those initiatives include differentiated instruction, as articulated in Tomlinson (1999); What Works in Schools, as articulated in Marzano (2003); continuous

0.1   **THE BIG IDEAS ABOUT UNDERSTANDING BY DESIGN MOST OFTEN CITED**

improvement and strategic planning; and performance assessment.

- The need to reconcile the connection between UbD and high-stakes accountability testing, including helping educators to overcome misconceptions about test preparation.

- The need to increase administrators' involvement in UbD, through means such as showcasing schools and districts that have made strides in making UbD a part of their organizational culture and instructional leadership. Additional models and exemplars aligned with best practices in continuous improvement are needed.

- The need to move forward in the use of electronic technology to create a national and international learning community regarding UbD. Currently, educators struggle to access and integrate the evolving structure and resources available through the UbD Exchange. In addition, there needs to be a more integrated, holistic approach to publicizing the use of UbD-focused videotapes, UbD-focused online courses, and Exchange-based exemplary units.

- The need for sustained, long-term collaborative inquiry into UbD, rather than one-shot training sessions.

- The need to build more cross-institutional partnerships among colleges, universities, and school districts that are responsible for integrating UbD into preservice teacher preparation and professional development programs. Although a growing number of preservice training institutions are using the framework, the perception lingers that UbD should be reserved for more senior staff members.

0.2 | THE ESSENTIAL QUESTIONS ABOUT UNDERSTANDING BY DESIGN MOST OFTEN ASKED

1. How do we overcome educators' anxiety and tension associated with the changes in mind-sets and practices required by UbD?

2. How can we expand our ability to access models, benchmarks, and exemplars of UbD units and related curriculum products?

3. How can we move beyond the initial training phase of UbD's implementation so we make UbD a natural part of our organizational culture and operating practices?

4. How can we overcome the misconception that UbD is just for the best and the brightest, and not for all students and staff?

5. How can we use our UbD experiences to transform staff attitudes and perceptions about standardized testing and overcome archaic notions of drill-and-kill teaching and test preparation?

6. How can we acquire and ensure the long-term availability of resources required to sustain successful UbD implementation (e.g., time, materials, curriculum development)?

7. How can we integrate UbD into our continuous improvement and strategic planning efforts?

8. How can we help teachers move beyond unit design and into unit implementation as they use the principles and strategies associated with each stage of UbD's backward design?

9. How do we make UbD a full staff effort, with instructional leadership by administrators and teacher-leaders who model and own this framework?

10. How can we ensure that UbD is a clear and natural part of instruction and learning for all students, including those in primary grades, those enrolled in special education or ESL instruction, and those who are socioeconomically disadvantaged?

1

IMPLEMENTING UNDERSTANDING
BY DESIGN: A SUMMARY OF
LESSONS LEARNED

ESSENTIAL QUESTIONS

1. *How does Understanding by Design provide a framework and a language to help educators promote all students' understanding?*

2. *How has Understanding by Design evolved since its initial publication? What are the major changes and trends associated with its evolution?*

3. *To what extent can educators abstract lessons learned about successful implementation of Understanding by Design and then apply those lessons to the process of strategic planning and continuous improvement?*

Understanding by Design (UbD) provides a common language for educators who are interested in promoting student understanding rather than formulaic knowledge or recall learning. It also provides a framework and a toolkit of research-based best practices that have been proven effective in helping educators to promote understanding-based results for learning, expand the range of assessment tools and processes they use to monitor student achievement, and enhance their design of instructional activities to promote high levels of student achievement.

This chapter summarizes the major lessons learned from successful UbD implementation as reflected in the experiences of educators who have used the framework for two or more years. The high-level users who participated in the study completed an online questionnaire (see Figure 1.1 at the end of this chapter), sat for one-on-one interviews, and took part in focus groups. The study asked them to respond to questions about UbD's effect on eight key areas:

1. Curriculum design, development, and implementation.

2. Assessment and evaluation of student performance.

3. Teaching for understanding, such as using differentiated instruction to address the needs of all learners.

4. Exemplary practices in professional development, including how UbD principles relate to the needs of the adult learner.

5. Organization development, strategic planning, and the continuous improvement process.

6. Cross-institutional partnerships related to all facets of new teacher induction and professional development.

7. The UbD "electronic learning community," including participants' reactions to resources such as the UbD Exchange, the ASCD UbD videotape series, and the relatively new area of Professional Development Online courses.

8. Our shared vision for education in the new millennium as an extension of experiences with UbD.

Understanding by Design at a Glance: A Brief History and Summary of Key Design Principles

Understanding by Design is the brainchild of Grant Wiggins and Jay McTighe, two internationally recognized experts in the field of

curriculum, assessment, and teaching for understanding. Wiggins has a long and rich history of promoting the understanding of all students, particularly within the context of a backward design model. In addition to his award-winning publications on standards, assessment, and curriculum renewal, Wiggins is well known for his work with essential questions and curriculum auditing as part of his tenure with the Coalition of Essential Schools in partnership with Theodore Sizer.

McTighe received national recognition for his work with Robert J. Marzano and Debra Pickering in their ASCD publication *Assessing Student Performance Using Dimensions of Learning* (1991). The success of that publication reinforced McTighe's emergent leadership position within the movement to reform assessment practices in U.S. education.

Wiggins and McTighe had worked together extensively in both national and international venues, as well as during McTighe's tenure as the director of the Maryland Assessment Consortium. Their shared vision for a framework that could synthesize the best of what we know about promoting high levels of achievement for all students crystallized in their 1998 publication *Understanding by Design*. That book was followed by a series of supporting resources, including *The Understanding by Design Handbook* (McTighe & Wiggins, 1999) and *The Understanding by Design Professional Workbook* (McTighe & Wiggins, 2004); a comprehensive set of videotape resources and training materials; and the UbD Exchange, an international electronic database used as a compendium of UbD principles, strategies, and practitioner-generated unit designs.

Wiggins and McTighe underscore that Understanding by Design is a framework, not an educational program. In it, they have attempted to synthesize the best practices and the research-driven design principles associated with teaching and assessing for understanding. Although complex and challenging, their work speaks to educators who know, either from experience or from intuition, that discrete, atomistic instruction focused on traditional drill-and-kill approaches is

guaranteed to produce little, if any, genuine learning or deep conceptual understanding among their students. Educators who have worked extensively with the Wiggins and McTighe framework almost universally acknowledge its commonsense recommendations for (1) unpacking curriculum standards; (2) emphasizing students' understanding, not just formulaic recall; (3) expanding assessment tools and repertoires to create a photo album of student achievement instead of a snapshot; and (4) incorporating the best of what current research tells us about teaching for understanding (including differentiated instruction) to meet the needs of all learners.

As we explore what high-level users and seasoned practitioners tell us about their experiences with UbD, we must keep in mind 10 major design principles at the heart of the Wiggins and McTighe framework:

1. Research tells us that students learn actively, not passively. Educators should consider the following big ideas when designing and delivering instruction:

  a. Students learn best when they actively construct meaning through experience-based learning activities.

  b. A student's culture, experiences, and previous knowledge (i.e., cognitive schema) shape all new learning.

  c. Learning depends on three dominant brain functions: (1) an innate search for meaning and purpose when learning; (2) an ongoing connection between emotion and cognition, including a tendency to slip into lower brain functions and structures when threatened; and (3) an innate predisposition to find patterns in the learning environment, beginning with wholes rather than parts.

  d. Learning is heavily situated; students' application and transfer of learning to new situations and contexts does not occur automatically. Teachers must help students to scaffold knowledge and

skills; they plan for transfer by helping the learner move from modeling to guided practice to independent application.

e. Knowing or being able to do something does not guarantee that the learner understands it.

f. Students learn best when studying a curriculum that replaces simple coverage with an in-depth inquiry and with independent application experiences.

g. Students benefit from a curriculum that cues them into big ideas, enduring understandings, and essential questions.

2. Teaching for deep understanding emphasizes students' capacity for meaningful independent use of essential declarative knowledge (facts, concepts, generalizations, rules, principles, and laws) and procedural knowledge (skills, procedures, and processes). Students demonstrate genuine understanding when they express their learning through one or more of the following facets of understanding:

a. *Explanation:* The ability to demonstrate, derive, describe, design, justify, or prove something using evidence.

b. *Interpretation:* The creation of something new from learned knowledge, including the ability to critique, create analogies and metaphors, draw inferences, construct meaning, translate, predict, and hypothesize.

c. *Application:* The ability to use learned knowledge in new, unique, or unpredictable situations and contexts, including the ability to build, create, invent, perform, produce, solve, and test.

d. *Perspective:* The ability to analyze and draw conclusions about contrasting viewpoints concerning the same event, topic, or situation.

e. *Empathy:* The capacity to walk in another's shoes, including participating in role-play, describing another's emotions, and analyzing and justifying someone else's reactions.

f. *Self-Knowledge:* The ability to self-examine, self-reflect, self-evaluate, and express reflective insight, particularly the capacity for monitoring and modifying one's own comprehension of information and events.

3. At the heart of teaching for understanding is the creation of a consensus-driven curriculum that clearly distinguishes between and among what is just worth being familiar with versus what all students should know, be able to do, and understand.

4. The best instructional designs are backward; that is, they begin with desired results, rather than with instructional activities. UbD's backward design process involves three interrelated stages:

a. *Stage One:* Identifying desired results (such as enduring understandings, essential questions, and enabling knowledge objectives).

b. *Stage Two:* Determining acceptable evidence to assess and to evaluate student achievement of desired results.

c. *Stage Three:* Designing learning activities to promote all students' mastery of desired results and their subsequent success on identified assessment tasks.

5. Students develop deep conceptual understanding when they can cue into the enduring understandings and essential questions at the heart of their curriculum. Enduring understandings are statements that clearly articulate big ideas that have lasting value beyond the classroom and that students can revisit throughout their lives. Essential questions are big, open-ended interpretive questions that have no one obvious right answer. They raise other important questions, recur naturally, and go to the heart of a discipline or content area's philosophical and conceptual foundations.

6. Objectives that enable knowledge clearly specify, in measurable terms, what all students should know and be able to do to achieve

desired understanding and to respond to essential questions (Stage One). Ideally, understanding-driven objectives should begin with behavioral verbs reflective of one or more of the six facets of understanding: *explanation, interpretation, application, perspective, empathy,* and *self-knowledge* (Wiggins & McTighe, 1998, p. 44).

7. When designing Stage Two assessments of student performance, educators must keep in mind the metaphor of a photo album, rather than the more traditional metaphor of a snapshot. Effective monitoring of a student's progress should incorporate many assessment tools and processes, including these:

   a. Tests and quizzes with constructed-response (performance-based) items, rather than exclusive use of selected-response items (true-false, fill-in-the-blank, multiple choice).

   b. Reflective assessments, such as journals, logs, listen-think-pair-share activities, interviews, self-evaluation activities, and peer response groups.

   c. Academic prompts that clearly specify performance task elements, such as format, audience, topic, and purpose.

   d. Culminating assessment projects that allow for student choice and independent application.

8. A primary goal of teaching for understanding should be the assurance that students can use their acquired understandings and knowledge independently in real-world situations and scenarios. Culminating performance-based projects (what Wiggins and McTighe refer to as GRASPS), therefore, should include the following core elements:

G = *Goals* from the real world.

R = *Roles* that are authentic and based in reality.

A = *Audiences* to whom students will present final products and performances.

S = *Situations* involving a real-world conflict to be resolved, decision to be made, investigation to be completed, or invention to be created.

P = *Products* and *performances* culminating from the study.

S = *Standards* for evaluating project-based products and performances.

9. Teaching for understanding should involve activities that support identified desired results and integrate planned assessments (Stage Three). Wiggins and McTighe identify seven core design principles for teaching in an understanding-based classroom in a template they call WHERETO. Each of the letters in this acronym corresponds to key instructional design questions educators should always consider when planning learning activities:

W = How will you help your students to know *where* they are headed, *why* they are going there, and *what ways* they will be evaluated along the way?

H = How will you *hook* and engage students' interest and enthusiasm through thought-provoking experiences at the beginning of each instructional episode?

E = What *experiences* will you provide to help students make their understandings real and to *equip* all learners for success throughout your unit or course?

R = How will you cause students to *reflect, revisit, revise*, and *rethink*?

E = How will students *express* their understandings and engage in meaningful self-*evaluation*?

T = How will you *tailor* (differentiate) your instruction to address the unique strengths and needs of every learner?

O = How will you *organize* learning experiences so that students move from teacher-guided and concrete activities to

independent applications that emphasize growing conceptual understandings?

10. Understanding by Design is not a program to be implemented; rather, it represents a synthesis of research-based best practices that are associated with improving student achievement. Successful UbD learning organizations are collaborative communities that emphasize practitioner inquiry, including the following:

a. *Peer Coaching:* Professional colleagues support one another by scripting lessons, providing focused feedback, and engaging in cognitive coaching (i.e., shared inquiry designed to align staff members' perceptions and judgments).

b. *Study Groups:* Colleagues study a text or explore an issue together and pool their experiences, reflections, and resources for understanding.

c. *Inquiry Teams:* Colleagues focus their study on a shared student achievement issue or an organizational problem that they wish to investigate together as an extension of their initial study group discussions.

d. *Action Research Cohorts:* Colleagues identify a research problem, hypothesis, or inquiry question concerning their learning organization; collect, analyze, and present available data; develop and implement an action plan related to identified solutions and interventions; and revise and modify their plan to reinforce a commitment to continuous improvement.

Voices from the Field: What Do Experienced Users Say About the Strengths and Challenges of Understanding by Design?

In light of these 10 major design principles, what do the teachers, administrators, trainers, and college and university representatives tell

us about UbD's status and about their success making these principles come alive in their respective schools, districts, and related organizations? This question guides our exploration throughout this book. Let's begin by examining three major sets of conclusions related to study participants' perceptions about UbD's strengths, its challenges and potential pitfalls, and its potential future both in individual learning organizations and in the field of education in general. A sample of participants' survey responses follows each summary conclusion.

UbD's Strengths

High-level UbD users identified the following as framework strengths:

- The commonsense nature of UbD's principles and strategies.

- Its potential power for overcoming a tendency in public education to teach to the test and to emphasize knowledge-recall learning.

- Its ability to provide a common, consensus-driven language related to research-based best practices in the areas of curriculum, assessment, instruction, and professional development.

- Its potential for guiding and informing the process of school renewal and educational reform.

- Its ability to guide and inform educators' efforts to unpack standards and to help all students develop a deep conceptual understanding of what they are studying.

Q. What do you consider to be the greatest strengths of Understanding by Design?

A. "UbD is a philosophy for teaching and learning. Once you 'get it,' it is very difficult to go back to creating disconnected activities or covering facts without a broader context. It helps provide a narrative for the content or skills, which allows teachers and students to place this information in a context that is both meaningful and transferable. It

has allowed me, as a supervisor, to have rich and critical conversations with my staff and [has] provide[d] an internal check for teachers to be self-reflective."
—Mark Wise, social studies supervisor, Grover Middle School, Princeton Junction, New Jersey

A. "UbD makes sense. It reflects what good teachers do and is supported both by research and classroom practice. The three stages of backward design present a coherent guide for unit or lesson planning that teachers have a comfort level with. It also causes teachers to reflect on 'why' as well as 'what' they're doing."
—Joseph Corriero, assistant superintendent for curriculum and instruction, Cranford, New Jersey

A. "It is practical and research based. The power of showing teachers how to write essential questions, alone, makes it an extremely valuable resource."
—David Malone, senior vice president, Quality Learning, Missouri City, Texas

A. "Teaching for understanding and the templates and different entry points to make it happen [are UbD's greatest strengths]. Many teachers see this as a way to reclaim the creativity that they used to enjoy before the days of drill-and-kill for the test became so popular."
—Judith Hilton, UbD cadre member and university professor, Greenwood Village, Colorado

A. "[UbD's major strengths are] the logic of the basic model, the focus that is put on assessment, and the requirement to be clear about what is essential."
—Ken O'Connor, UbD cadre member, Scarborough, Ontario, Canada

A. "All three strategies—the backward design process, design standards, [and] performance tasks—can help teachers self-assess and engage in peer review, which can ultimately improve instruction."
—Alyce Anderson, principal, Herbertsville Elementary School, Brick, New Jersey