The Delta Kappa Gamma Bulletin

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The Bulletin, the official journal of The Delta Kappa Gamma Society International, promotes professional and personal growth of members through publication of their writings.

The Bulletin invites materials appropriate to the Society's Purposes: position papers, applied and/or data-based research, reviews of literature, program descriptions, and other articles on announced themes or other topics of interest to educators; letters to the editor; book and technology reviews; poetry; and graphic arts.

Prose manuscripts for the Bulletin, a refereed journal, are reviewed by the Editorial Board and the Society editorial staff. Selection is based on relevance of the topics addressed, accuracy and validity, contribution to the professional literature, originality, quality of writing, and adherence to Submission Guidelines (see page 59). Editorial Board members evaluate each submission's focus, organization, development, readability, and relevance to the general audience of Bulletin readers. Due to the diversity of the Bulletin audience, material that expresses a gender, religious, political, or patriotic bias is not suitable for publication.

Please send materials to bulletin@dkg.org or to Bulletin Editorial Staff, The Delta Kappa Gamma Society International, P.O. Box 1589, Austin, TX 78767-1589.

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The Delta Kappa Gamma Society International promotes professional and personal growth of women educators and excellence in education.

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Call for Submissions

Members are encouraged to submit manuscripts for consideration by the Bulletin Editorial Board. The Delta Kappa Gamma Bulletin accepts Action/Classroom Research, Qualitative Research, Quantitative Research, Reviews of Literature, Program Descriptions, Position Papers, Book/Technology Reviews, Graphic Arts, Letters to the Editor, and Poetry for print issues (spring, fall) and online issues (summer, winter). Manuscripts should be focused, well organized, effectively developed, concise, and appropriate for Bulletin readers. The style should be direct, clear, readable, and free from gender, political, patriotic, or religious bias. For more detailed information, please refer to the Submission Guidelines on page 59 and the Submission Grid on page 60. Listed below are the suggested themes of upcoming issues.

Spring 2014 (80-3) Purposeful Communication (Print)
(deadline is December 1, 2013)
Personal • Professional • Organizational

Summer 2014 (80-4) Impact of Educational Reforms (Online)
(deadline is March 1, 2014)
NCLB • Common Core Standards • International Initiatives • Organizational Change • Cultural Change

Fall 2014 (81-1) Teaching Performance (Print)
(deadline is June 1, 2014)
Issues of Quality • Professional Teaching Standards • Assessment • Teacher Evaluation • Tenure • Professional Growth

Submit all materials to:

Bulletin Editorial Staff
bulletin@dkg.org
From the Editor

Anticipating the future of education is both exciting and daunting. At a recent DKG regional conference, presenters of workshops about 3-D printing and Web 2.0 apps electrified participants with possibilities! At the same time, just as the teacher in a one-room schoolhouse 100 years ago would have been hard pressed to envision the complex, standards-driven, technology-rich classrooms of 2013, participants struggled to wrap their minds around the kind of change that such technology might allow in classrooms—if, indeed, classrooms will continue to exist! The tension between the familiar and the forthcoming is complex, and perhaps management consultant, educator, and author Peter Drucker was not exaggerating when he noted that “trying to predict the future is like trying to drive down a country road at night with no lights while looking out the back window.”

Undaunted, the authors in this issue consider the future with confidence. Trybus sets the stage through an interview with noted educational consultant Robin Fogarty, who delineates the need to move toward an inquiry-based model of learning and to enhance use of technology in order to create “thinkers, problem solvers, and decision makers.” Harsh and Mallory discuss ways to build capacity for success in students, and Ramsey and Baethe delineate specific capacity needs in the areas of science, technology, engineering, and mathematics. Providing a complement—or perhaps counterpoint—to these arguments for rigor and relevance, Cook urges the importance of play as a powerful tool to enable learning. Hammonds, Matherson, Wilson, and Wright identify barriers to integration of technology and offer several tools to help teachers move forward, while Teague and Swan focus on a topic close to the hearts of DKG members: the need to support the next generation of educators. To close the issue, Kerr and Pettit share a program to help ensure the future of DKG as a force in education.

Education is, at its root, about the future—preparing young people for whatever lies ahead. As teacher and astronaut Christa McAuliffe poignantly noted, “We touch the future; we teach.” Urged by DKG founder Blanton to be “forward moving ever,” the key women educators of DKG—and all educators—will find food for thought and inspiration in these articles and realize, as Drucker ultimately noted, “The best way to predict the future is to create it.”

Judith R. Merz, EdD
Editor
2013 International Achievement Award

Hannesdóttir: Europe’s First Achievement Award Recipient
By Beverly Helms, Ed.D., International President 2012-2014

Each year The Delta Kappa Gamma Society International recognizes one member for distinguished service to the Society. From recommendations submitted by members, chapters, or state organizations, the International Executive Board selects a member for this honor. The symbol of this honor is a gold medallion presented to the recipient. The first medallion for the International Achievement Award was given in 1933 to Dr. Annie Webb Blanton; the most recent award was presented at the Europe Regional Conference in Amsterdam, The Netherlands.

Dr. Sigrún Klara Hannesdóttir, 2012-2014 Ad Hoc Election Process Committee member; 2013-2014 Educational Foundation Liaison; and 2010-2014 member of the Editorial Board, is the first European and the 81st recipient of The Delta Kappa Gamma Society International Achievement Award. A DKG World Fellowship recipient prior to her initiation into the Society in 1975, Hannesdóttir was a founder of the Iceland State Organization and served in a variety of positions at the chapter, state organization, regional, and international levels.


Hannesdóttir was Professor of Library and Information Science and the first female Director of the National and University Library of Iceland. She directed the Nordic Council for Scientific Information in Helsinki, Finland, was recognized for her leadership skills by the President of Iceland, and was awarded the prestigious Order of the Falcon. Recipient of the European Achievement Award in 2009, Hannesdóttir is a graduate of the International Leadership Management Seminar. She knows nine languages, travels extensively, and is recognized for her mentorship and dedication to the advancement of women and excellence in education. In Europe, she is known as the leading expert on The Delta Kappa Gamma Society International.
2013 Educators Award

Exit: The Endings That Set Us Free

The DKG Educators Award is given to a woman author whose book displays content that may influence the direction of thought and action necessary to meet the needs of today’s complex society. The content must be of more than local interest with relationship, direct or implied, to education everywhere. The award committee has chosen the 2013 award recipient, Exit: The Endings That Set Us Free, and recommends five other notable contenders.

To prepare for writing Exit, Harvard sociologist Dr. Sara Lawrence-Lightfoot spent 2 years traveling the United States and interviewing individuals who detailed their own exit stories. She shares these stories of leaving and of the rituals of good-bye to illuminate universal patterns of exit and their significance. As readers examine the portraits provided in this book, they come to understand how to make personal exits with dignity, grace, and purposefulness.

Exit stresses the importance of recognizing and celebrating those times in life when one leaves the known to embark on the unknown. Organizing her material under captivating section headings (Home, Voice, Freedom, Wounds, Yearning, and Grace), Lawrence-Lightfoot shares a collection of exit stories from people of varying ages and walks of life. The reader’s heart engages with the featured stories while embracing and exploring his or her own exits and new beginnings. Expect to be challenged and changed by this book in unexpected ways!

Members of the committee commented that “Exit is life-changing, sets a new course and opens doors—it is enlightening, inspiring, and reflective! This is a book I could read countless times. I had difficulty putting it down. The author involves readers as we identify with characters and find empathy for struggles and victories. Exit offers excellent references and a selected sources section that integrates interesting related information.”

Through portraiture, Lawrence-Lightfoot brings readers into the personal experience of each of the individuals she has interviewed. With skillful weaving, she portrays the character and completely captures the reader. One of the more poignant interviews is with a man dying of cancer and preparing his family and himself for the final exit—the inevitable time that will become permanent change. The author draws readers emotionally into the decisions made as his wife vows to her husband, who had come home to die, that she will make this time “glorious” for him. His exit was indeed a celebration, as countless friends and relatives came to visit and converse with their friend at his home, where he could experience “a dignified, honoring death, surrounded by loved ones” (p. 219).
“The protagonists in this book speak about the paradoxical sensation of exits—the moment frozen in time like an old Polaroid photograph, the long arduous road to the exit, and the fallout and reverberations that inevitably follow—as ‘iterative’ and ‘messy’” (pp. 232-233). All people must maneuver their own exits during their lifetimes, and, in varied roles, all must also support students, children, friends, relatives, colleagues, neighbors, and even strangers through their own exits as they sashay or stumble toward new beginnings.

Lawrence-Lightfoot, recipient of 26 honorary degrees from colleges and universities in the United States and Canada, has studied the culture of families, communities, and schools and the relationships between human development and social change. Her passion for education runs deep in her family history. Her grandparents, both teachers, moved from Boston to promote the education movement in Mississippi. Her mother, a pediatrician and child psychiatrist, received a scholarship to Cornell, where she was, at the time, the only African American undergraduate. Lawrence-Lightfoot has written 10 books, including Balm in Gilead: Journey of a Healer (New York, NY: Penguin Books, 1995, 368 pages), a tribute to her mother. She has pioneered portraiture, an approach to social science methodology that bridges the realms of aesthetics and empiricism.

A recipient of many awards, including the prestigious MacArthur Foundation fellowship and Harvard’s George Ledlie prize for research, Lawrence-Lightfoot accepted the Emily Hargroves Fisher endowed chair at Harvard University in 1998. Upon her retirement, that chair will become the Sara Lawrence-Lightfoot endowed chair, making her the first African American woman in Harvard’s history to have an endowed professorship named in her honor (PBS-African American Lives).

In accepting the 2008 Margaret Mead Fellowship from the American Academy of Political and Social Sciences, Lawrence-Lightfoot noted, “I have wanted my writings to be informative and inspiring, speaking to the head and the heart, focusing on the complex good rather than the narrowly pathological; inciting identification and self-interrogation among readers.” In Exits, she accomplishes this goal.

**Five Other Notable Reads Recommended by the Educators Award Committee**

This year the committee received 19 book submissions from publishers and authors. The quality and scope of books was phenomenal, and the committee highly recommends five additional submissions as both educational and enjoyable reading. Two books directly share educational experiences focusing on issues and happenings in schools, and the other three reveal interesting aspects of lives affected by motivational forces: poignant revelations of the effects of racism; exploration of love of animals and preservation; and inspirational stories of pioneering women.

*Born To Rise: A Story of Children and Teachers Reaching Their Highest Potential* (New York, NY: Harper Collins, 2012, 256 pages) was written by Deborah Kenny, founder and CEO of three charter schools that make up Harlem Village Charter Schools. She has a passion for
education—a deeply personal dream to pursue social justice for the nation’s most vulnerable children, those in poverty.


Frankie Condon, associate professor of English at the University of Nebraska-Lincoln, offers personal experience in *I Hope I Join the Band: Narrative, Affiliation, and Antiracist Rhetoric* (Logan, UT: Utah State University, 2012, 212 pages) as she recounts how her parents’ adoption of a Sioux Nation child was done with good intentions yet, in reality, proved damaging.

*The Teachers’ Lounge (Uncensored): A Funny, Edgy, Poignant Look at Life in the Classroom* (Lanham, MD: R & L Education, 2012, 180 pages), written by Kelly Flynn, will make you laugh, cry, ponder, and stomp—in no particular order. Flynn blurts out what every public educator has been dying to say but has not had anyone ask.

Dame Daphne Sheldrick, author of *Love, Life, and Elephants: An African Love Story* (New York, NY: Picador, 2013, 368 pages), seizes readers’ heartstrings and takes them to Africa. Dame Sheldrick weaves her own love story among facts about the lifesaving work with orphaned animals at her family’s nature preserve and the untiring efforts to end poaching in the African wilds.
Interview

Preparing for the Future of Education—Equipping Students with 21st Century Skills: An Interview with Dr. Robin Fogarty
By Margaret Trybus

This interview continues a series initiated by members of the Bulletin’s Editorial Board. The goal of the series is to feature interviews conducted with Delta Kappa Gamma members or other educational leaders on a topic related to the theme of the issue. Here, Dr. Trybus presents the results of an interview with education writer and leader Dr. Robin Fogarty regarding the future of education.

An Introduction to Dr. Fogarty

Robin Fogarty, PhD, is president of Robin Fogarty and Associates, Ltd., a Chicago-based, minority-owned educational publishing and consulting company. Her doctorate is in curriculum and human resource development from Loyola University of Chicago. A leading proponent of the thoughtful classroom, Fogarty has trained educators throughout the world in curriculum, instruction, and assessment strategies. She has taught at all levels from kindergarten to college, served as an administrator, and consulted with state departments and ministries of education in the United States, Puerto Rico, Russia, Canada, Australia, New Zealand, Germany, Great Britain, Singapore, Korea, and the Netherlands. Fogarty has published articles in Educational Leadership, Phi Delta Kappan, and Journal of Staff Development. She is the author of numerous publications, including Brain-Compatible Classrooms, Ten Things New Teachers Need, Literacy Matters, How to Integrate the Curricula, The Adult Learner, A Look at Transfer, Close the Achievement Gap, Twelve Brain Principles, Nine Best Practices, Informative Assessment, and Supporting Differentiated Instruction: A PLC Approach. Her recent work includes a two-book leadership series, From Staff Room to Classroom—Book I and II, as well as a chapter on The Singapore Vision, in 21st Century Skills: Re-Thinking How Students Learn. Fogarty’s latest co-authored efforts are How To Teach Thinking Skills Within The Common Core: 7 Student Proficiencies of the New National Standards; and School Leaders Guide to the Common Core: Achieving Results With Rigor And Relevance.

Her motto is “teachers make the difference in the learning journey of every child.”
Introduction to the Interview

The future of education may seem daunting and challenging if educators lack a vision of what matters most for students to be prepared for the 21st century. A clear sense of purpose and direction for that vision must start with acknowledging the challenges in the change process. What educators know and practice in teaching now will not be adequate for the future with the changing roles of curriculum, instruction, and assessment. As part of a global society of educators, DKG members need to acknowledge the impact of technology, constructivism, school safety, and the needs of emergent learners.

Foreseeing the future starts with determining how societal needs will be addressed through educating students. A look at what is in existence in schools now will lead to discussing, analyzing, and planning to manage the complex process of change for the future. This process is a necessity because the future is now, and reconceptualizing teaching and learning has already begun.

Dr. Robin Fogarty has given this topic considerable thought. Her life’s work in curriculum, instruction, and assessment strategies has been refined through teaching, administration, professional development, research, writing, and consulting in schools worldwide. Her perspective offers a compelling and thoughtful approach that suggests ways educators can be motivated and thoughtful to be innovative and entrepreneurial in preparing for the future.

What do you see as challenges for educational systems and how can educators better address these challenges as they prepare for the future?

We have to frame the challenges around the needs of students, not just the stuff, and help students become literate, educated, and fulfilled regardless of college, career, or technology-bound futures. This will require systems to shift the focus to students and help students to become self-reliant, self-sufficient, and self-fulfilled. Such a shift will be challenging as systems adjust to include the development of cognitive behaviors with a focus on higher order thinking skills that are apparent in some classrooms now but will be most important in the future. The challenges of diversity in the classroom, inequities of the system, and the mobility of the family impact these shifts in focus, creating a constant changing of the guard.

Robin Fogarty, PhD, is a well-known author and trainer in the field of curriculum, instruction, and assessment. President of RFA: A Robin Fogarty Company, she is a strong proponent of the thoughtful classroom and shares a wealth of expertise from her experiences teaching at every level and serving as an administrator and international consultant. More information on Robin Fogarty and Associates can be found at http://www.robinfogarty.com/

Margaret Trybus, EdD, is Professor of Educational Leadership and Associate Dean of Graduate Studies in the College of Graduate and Innovative Programs at Concordia University, Chicago, IL. Dr. Trybus teaches graduate courses focusing on the areas of education and leadership and is a research expert in the areas of administrative internship programs, organizational development, and change and high school restructuring. A member of Iota Chapter in Lambda State Organization (IL), she has served as chapter president and is the recipient of state scholarships and the Emma Reinhardt International Scholarship. Trybus serves on the Delta Kappa Gamma Editorial Board, 2012-2016, margaret.trybus@cuchicago.edu
The Common Core Standards try to address these challenges by creating a framework that is generic yet high level and that is wide-open for teachers to develop a curriculum that is robust and relevant. This is a shift because our children are conditioned as a result of NCLB to be more concerned about the right answer rather than being learners. Students are not interested in problem solving and reasoning, just the right answers. They go through the motions to get the grade. Instead, the mission of schooling must be fostering the desire to learn more and problem solve in the process. Students need to investigate and realize learning goes on for the rest of their lives. It’s never finished…we never really graduate.

There are so many options for education outside of the school building. For example, the impact of technology beyond the classroom is constantly evolving, and students are becoming more entrepreneurial in their mindsets. College also needs to be more affordable. Parents are looking for other options. Graduates are looking for jobs. School is a game for students who know they have to follow the system. If it is really all about the students, we have to change the focus. Right now it seems that the focus is on publishing companies making money on testing that does not put students and teachers first. It is a sad state of affairs when we blame teachers for things in the system when they have no respect, incentive, or recognition for the dedication to students in their care.

Another challenge arises from the inequities in systems. The great diversity of the have and have nots is evident. Some schools have phenomenal facilities with every possible advantage, and then there are pockets of poverty where they have nothing, not even a library. In Chicago, we have moved to the charter school model created through public and private funds, and some schools are going to close in neighborhoods with high poverty. We have to be economically prudent, but if you look at the pattern within systems, it is still not equitable. We have not made education a priority in our budgets.

At the school level, given the challenges you mentioned, what three things do you see as most urgent for schools to change in order to address the future of K-12 education?

1. The focus on teaching and learning rather than on assign and assess is critical. We are so assessment driven within schools that it dictates the whole day of what goes on. Getting ready for the test through data-driven measures is wonderful, and Response to Intervention is looking for ways to intervene with students who need it, but testing mandates should not rule the curriculum and override everything else. Assign and assess is not teaching. We have to take time to teach kids to think…we need to create thinkers, problem solvers, and decision makers. We asked someone who owns a company, what are you looking for when you hire people? He said, “Someone who is self-reliant, a problem solver—someone resourceful who understands how to figure it out and will get the job done. They are motivated to do that, and know they are the one, asking if not me then who?” This is a great analogy indicating kids have to be self-sufficient.

What educators are reading now with the Common Core and some of the teaching strategies being recommended suggest we shouldn’t help kids so much. Let kids get a little frustrated and struggle to figure things out on their own; ask them, “What’s the next thing you would do?” Piaget said, “Knowing what to do when you don’t know what to do is intelligent behavior.” So, how do we develop students who are self-reliant, resourceful, self-motivated, and self-initiating to direct themselves for problems that we can’t foresee in the future?

An unintended outcome of policies has occurred where assessment and accountability have become an end-all to the point where high-stakes assessment is related to funding
such as Race to the Top. If you don’t show improvement, you don’t get any money and can’t even apply for it. This was not done maliciously and was well intentioned by policy makers but resulted in a system that drives competition that schools did not create.

2. Moving toward an inquiry-based model of learning—such as that found in project-, performance-, and problem-based learning—creates situations in which students own their learning. Learning becomes real-world relevant because students are solving a problem or doing an investigation or an experiment. Within that framework, 21st century skills are being taught. Learning needs to have purpose and meaning—concepts that are aligned with the Common Core Standards that talk about rigor and relevance. For example, if one is going to teach the Pythagorean Theorem as part of the math curriculum, students need to know what they will do with that information. A project that incorporates the use of right triangles in construction demonstrates relevance and importance.

As an example of such relevant, quality education, over a 5-year period, Singapore’s junior college instructors have been totally involved in problem-based learning models. The move toward having students work collaboratively on real-world problems that align with 21st century skills of entrepreneurship and enterprise is evident. Such work is very relevant because creative thinkers will need to be able to confront future problems that we have not seen before.

3. Students need to know every facet of technology that will totally impact our education system just as it will impact every other institution in our society—for example, banking, the stock market, and ordering groceries. Our technology infrastructure in schools is not sufficient. Digital devices with games, Facebook, and Twitter accounts have taken over the world and connected students through social media. Bringing these devices to schools facilitates edutainment in the form of skill and drill games. The high-tech schools are moving into technology as a totally integrated component similar to reading, writing, speaking, and listening skills. Canada has even added representing and viewing to literacy skills. Technology is not just a subject, and it is more than a tool. Using it suggests teachers don’t have to be the givers of knowledge any more because technology is there at a student’s fingertip.

**What is the changing role of teachers to address those needs?**

The teacher no longer needs to be the giver of information, the assessor, and the grantor of grades. A knowledge-based curriculum is not necessary because we can Google anything faster than one can put it on the board. The teacher is no longer the sage on the stage and no longer the only expert in the classroom. Even though teachers are grounded in their disciplines and hopefully have that passion that can get kids excited about their disciplines, the shift is to being a facilitator, coach, and learning partner. The facilitator provides the high-tech classroom. This is the place where kids connect with technology to
work collaboratively. As technology intrudes in our lives in a good way, teachers have to facilitate the interaction and the collaboration, because in the end students need to talk to each other and know how to communicate, explain, and find consensus.

Teachers are learning partners with young people who know technology and are fearless. We have to find ways to integrate technology and use it. Collaboration and communication, along with critical and creative thinking, are 21st century skills that are addressed through coaching. The teacher isn’t answering the questions, because he or she may not know the answers; rather the teacher is helping students find the things they need to complete the tasks. The teacher becomes the facilitator of collaboration by giving students the social skills that are needed, coaching them to move along as they pursue investigations, and fostering the idea of a learning partner because technology is going to keep changing faster than we can imagine.

The benefit of 21st century skills is what is being advocated in Common Core Standards. We want students to be ready for the future, and now there is a parallel track between 21st century skills and Common Core, which is very promising for future curriculum development. New assessments will require reasoning, logic, the explanation of what one has done, and representation of one’s work. Assessment is not just about solving the problem. The nature of assessments by groups such as the Partnership for Assessment of Readiness for College and Careers and the Smarter Balanced Assessment Consortium will provide that focus in the future.

As you work with schools, how aware are boards of education members, administrators, and teachers of these needs, and do you think they are optimistic or pessimistic in facing these challenges?

Right now, we are just coping with educational systems. Teachers and administrators are fully aware of what is going on, but the power rests with boards of education. Teachers are overwhelmed with expectations. People in the system are having a difficult time with changing it. Principals are exhausted with teacher evaluation and Common Core training and are just coping. We have to face these problems and make the public aware that inequities exist, but we have so many possibilities and tools through organizations. Collaboration between universities and schools is a must, and they have to support each other. Teacher education programs and school programs have to be in sync and supportive of each other.
What innovations are promising to build on for the future of education?

The innovation that is the most critical in the schools is the handheld device. From PreK to college and university, there is no job in this world that will not require technosaviness. Having three computers in the back of the room is not the future. Some schools do BYOD—bring your own device—because the schools can’t afford them. If it is a priority, however, administrators will find the money to get technology into the hands of students. Traditional textbooks will become obsolete because of the rapid pace of change.

The growing awareness of students and options they have to make a difference will be a future force. Students have the power to make a difference. They are protesting so many assessments and identifying what schools need to help them learn. Students will become activists more often because they have more of an awareness of what is going on in schools.

Are there lessons learned from international teaching and learning that should be reviewed and studied?

Other countries have different approaches to education. In Singapore, where I worked for a number of years on integrated curriculum, the model is thinking schools, learning nation. The country honors education, and its slogan—teach less, learn more—means less teacher talk and more student engagement. New Zealand schools are very child centered and innovative; we in the United States have moved away from that. Finland starts reading programs later and lets kids be kids longer. It works for them. Australia is trending toward testing, but it is very common for Australian families to travel, resulting in children who are very worldly and aware of the global society. In the United States, we are less likely to have a global focus. This is very striking to me because I have worked in these countries. Canada honors their teachers in the same way as the Japanese, and they are well paid. Entrance into their schools of education is highly competitive—the exact opposite of the situation in the United States.

There are things we can learn from other countries so that teachers receive professional development similar to that of successful companies. Professional learning communities, grade-level teams, and experts who are home grown help address teachers’ concerns so that they don’t feel isolated and can face the future with confidence.
The Future of Education: Building Capacity for Success
By Sharon Harsh and Michael Mallory

The future of education includes building the capacity of students to be successful and attain higher performance levels. The authors present the need for building such capacity, explain the elements of learning capacity, and discuss one program that successfully builds capacity and increases the performance of at-risk students. Personal success factors and essential program-success factors are presented and described, and the authors conclude that the combined effect of capacity building and carefully designed educational experiences will increase the opportunity for all students to succeed.

Success is not a condition attained by chance or serendipity. Rather, success is the result of the convergence of factors that pave the path to success. To be successful, students need to master an expanding, diverse curriculum and to participate in learning opportunities in which the experiences are carefully designed and implemented to attain successful results (Darling-Hammond et al., 2008). The future of education must include programs and learning opportunities that cultivate and support success for all students, and, to reach this important target, new levels of learning and performance will be required at both the individual and organizational levels (Frey, 2007). The future of education thus will include building the capacity of students to utilize new learning strategies (Darling-Hammond et al., 2008), building the capacity of teachers and administrators to implement instructional design techniques that will create successful learning experience for all students (Hargreaves & Fullan, 2012), and building the capacity of the entire education organization to implement methods to ensure higher performance and success at all levels (Daghfous, 2004; Harsh, 2010, 2013). Building the capacity for success can be realized by concentrating efforts in four areas: (a) cultivating learning capacity through macrostructures, increasing levels of learning, and metaskills; (b) creating learning experiences designed to cultivate success; (c) supporting personal success factors; and (d) designing and implementing programs that have built-in success factors (see Figure 1). The literature on learning and the results of one successful program provide examples and strategies for creating this future.

Building Capacity for Success: Learning Capacity

Learning capacity is the ability to fill the gap between the knowledge stored from the past and the knowledge required to address current tasks and challenges (Zack, 1999) by rearranging existing knowledge, revising previous knowledge structures, and acquiring new knowledge (Dibella, Nevis, & Gould, 1995; Dixon, 1994; Huber, 1991). When students receive new knowledge, they selectively attend to and process the information (Dixon, 1994), demonstrating wide intra- and inter-individual variability in the amount of change and learning that occur (Ram, Stollery, Rabbitt, & Nesselroade, 2005). The degree
of learning is in part due to a reciprocal process of individual engagement and invitational practices established in the classroom (Billet, Barker, & Hernon-Tinning, 2002; Johnson, Perez, & Uline, 2013). If a student is afforded the opportunity to engage in learning activities and the new learning is valued, learning is increased.

Ultimately, change is a process of learning, and over time, superior performance depends on superior learning (Senge, 1990). Whether the focus of change is direct instruction, professional development, mentoring, technical assistance, or capacity building, effective improvement efforts begin and end with learning. In order for individuals and entire organizations to implement change and improved practices, they must learn new information, skills, structures, and processes.

**Levels of learning capacity.** Both individuals and organizations can function at one of three orders of learning and change, each corresponding with a level of learning capacity (Bateson, 1972). The first level of learning capacity is labeled as first-order learning and refers to doing more of the same within a similar boundary without examining or changing the assumptions that inform the work. Most formal learning is first order, content focused, and designed to transfer information. Second-order learning refers to a significant change in thinking and in what is being done. In second-order learning, assumptions and values are examined. First-order learning is characterized as doing things better and is focused on efficiency and effectiveness, while second-order learning is concerned with doing better things (Bateson, 1972). Third-order learning is characterized as deeper, more reflective,
challenging, and often more permanent.

**Macrostructures.** Complex learning activities require persons to understand, organize, and retain a large amount of new information. When individuals participate in learning activities, they comprehend, organize, and remember the information by synthesizing what they read, see, and hear into a cognitive framework that van Dijk (1990) called a *macrostructure*. The macrostructure, or synthesized version of what a person learns, is formed from the development of two types of *micropropositions*, each idea representing a description of something and its properties. A *macroproposition* is the main idea that summarizes and synthesizes the detailed micropropositions. Once it is formed, a macrostructure is used to understand additional information, complete tasks, and answer questions or explain the concept to others (Harsh & Kincaid, 2007; Kintsch, 1987). Figure 2 provides an example of the macropropositions and micropropositions in a macrostructure on literary genre. This macrostructure is one that a teacher could use to plan an introductory lesson and represents what students should know and how their knowledge should be organized to understand the two genre categories of fiction and nonfiction. In subsequent portions of the curriculum, the macrostructure would be reordered around additional details, building the capacity for students to deepen their understanding of other forms of genre.

![Macrostructure](image)

**Figure 2.** Macrostructure for an overview or introductory lesson on genre (fiction and nonfiction).

**Metaskills.** Metaskill capacity involves the ability to use overarching skills to learn other skills, to take any skill and break it down to analyze and figure out exactly how it works, and to use metaskills to perform single skills (Muukkonen & Lakkala, 2009; Nurius, 1996; Saunders, Batson, & Saunders, 2000; Wilson, 2009). Further, metaskill analysis provides the information needed to learn and master any other skill. Individuals with metaskill capacity can acquire new regular skills more easily, make better use of the regular skills already in place, and proactively engage in a continuous cycle of skill development and new learning. For instance, a student who is well-organized and thorough in capturing details in any given situation (metaskills) could acquire specific skills required to be an investigative reporter or court recorder. Metaskills such as the ability to analyze and synthesize large amounts of complex information could be used to build the capacity to master a new language or a difficult subject like organic chemistry.
Building Capacity for Success: Learning Experiences

In addition to building student learning capacity, classroom instruction and all learning experiences must be designed for students to succeed. One way to support student success is to design instruction around a set of sequential steps that create a chain of learning experiences (Harsh, 2013). Learning involves a hierarchical process that can be placed into discrete steps. The process forms a chain with each step sequentially linked to the next. The successful implementation of each step provides a foundation for the next, ultimately culminating in a larger base of accurate concepts, ideas, and skills that can be used to apply and acquire new knowledge and expand student learning capacity. Further, the steps in the process include cognitive strategies, processes, and structures that enhance learning and build learning capacity. During instruction, students must process information with understanding in order for learning to occur. Classic cognition processes such as metacognition, macrostructures, and intracognitive function are important processes that help students manage cognitive load (Clark & Harrelson, 2002; Sweller, van Merrienboer, & Paas, 1998), cue the retrieval of information from long-term memory (Chun & Jiang, 1998; Clark, 1998), and complete near transfer tasks to strengthen understanding and learning (Clark & Harrelson, 2002; Mayer & Wittrock, 1996). Using these processes, teachers can purposefully design and implement instruction to enhance learning through a set of sequential steps that form a learning chain, each serving as building blocks to full understanding.

In this approach, learning experiences are also constructed on several important concepts regarding learning and the design and delivery of effective instruction. Some of the concepts include learning progressions (Heritage, 2008); scaffolding, prior knowledge, appropriate instructional strategies, restructuring knowledge, deep foundation of factual knowledge, diagnosing student learning (Darling-Hammond et al., 2008); assimilation and accommodation processes (Piaget, 1962); knowledge compilation, authentic application of concepts and skills, automaticity, proactive and retroactive interference, negative learning, transfer failure, metacognitive regulation (Pressley & McCormick, 1997); depth of knowledge (Webb, 2002); intracognitive functioning (Vygotsky, 1962, 1978); embedded assessment, continuous assessment for learning (Stiggins, 2005); aligned curriculum standards (English & Steffy, 2001); and essential knowledge, curriculum mapping, and lesson design (Wiggins & McTighe, 2011). The concepts are integrated into the sequential steps, forming a comprehensive approach that teachers can use to increase student success in mastering the information presented.

Building Capacity for Success: Personal Success Factors

Learning capacity and well-designed learning experiences are critical precursors to increased student performance and achievement. In addition to the learning structures and elements that compose learning capacity and effective learning experiences, what additional factors are at play when students break at-risk barriers and move toward high levels of performance? How does change occur? How does the capacity to respond to opportunity develop?

Students who move from an at-risk state to one of success have to acquire new knowledge and behaviors, abandon old practices in favor of new ones, and integrate the new state into all facets of their lives in order to make decisions continuously that will sustain and maintain the new status. Students have to be open to new ways of thinking
and responding to opportunities and must cultivate personal capabilities that will sustain their efforts.

One program that cultivates high performance is the Ron Brown Scholar Program (RBSP), a nationwide organization that selects at-risk students with great potential and builds their capacity to achieve success through program and individual support. Consistently, Scholars demonstrate great academic potential and are accepted to several prestigious universities. In addition, Ron Brown Scholars have a 99% college-graduation rate, and more than half of all Scholars go on to some form of graduate study.

Students who apply for admission into the RBSP demonstrate a wide variety of personal strengths; however, four personal success factors seem to emerge among the majority of students who developed the capacity to break at-risk barriers: resilience, anchor, efficacy, and academic and leadership potential.

**Resilience**. Michael Mallory, Executive Director of the RBSP, found that students in at-risk circumstances who were able to persevere in spite of the barriers confronting them were those who were able to either *insulate* or *isolate* (Mallory, 2012). A student who chose to insulate created a physical, mental, or emotional space that served as a buffer or sanctuary from the challenging surroundings. In order to insulate, the student had to create time and a protective shield that afforded the ability to reflect, think, and reconstruct a mental reality upon which to act. Other students who were able to break the at-risk barrier were those who chose to isolate. In these situations, students were unable to create a private or protected space and, instead, had to find a way to leave the environment and seek a place where they could physically and mentally survive and thrive.

The insulate-or-isolate response is one of several types of behaviors that Luthar, Chichetti, and Becker (2000) called resiliency—a process that results in positive adaptation within a context of adversity and risk factors and ultimately builds the capacity of an individual to be resilient. At-risk individuals who demonstrate positive adaptation in spite of living in adverse environments select and act upon elements of the environment that create resiliency. Elements that create resiliency and promote success, such as insulating and isolating, are known as protective mechanisms (Gutman, Sameroff, & Cole, 2003)—factors used to protect the individual from personal vulnerabilities and external stressors. The explanatory terms *insulate* and *isolate* used by Executive Director Mallory are classifications of the mechanisms described in student application essays.

Brandtstadter (1984) and Lerner, Brittain, and Fay (2007) also noted many individuals become resilient by selecting the portion of the environment to which they choose to respond (and isolate the undesirable elements of the environment) and others adjust to the situation by using psychological processes of coping and causal attribution (insulating themselves from the undesirable elements of the environment) in order to maintain a positive and motivated perspective. Bandura (2006) explained the context in which resilient behaviors are formed. He wrote that individuals live in one of three types of environments: imposed, selected, or created. Imposed physical and social environments encroach on individuals and limit the amount of control that can be exerted on the circumstances. However, as Bandura explained, individuals have the ability to control how they construe and react to the environment. A selected environment is one composed of the elements that an individual chooses and acts upon. Some individuals take advantage of the opportunities that an environment provides; others are consumed by the constraining and debilitating aspects of the context in which they live. A created environment is one in which individuals construct physical, social, or personal environments that provide control
over their lives. In all three environments, the more control an individual needs to manage adverse conditions, the more capacity is required to become resilient.

**Anchor.** Repeatedly, students who break at-risk barriers report that something or someone provided an anchor that allowed them to transcend a limited vision of what they could be. In some cases, the anchor was described as an individual anchor; in other cases, it was described as an internal anchor. An individual anchor was often a member of the family and, in some situations, the individual anchor was a person who had no obligation to the student other than to cultivate an enhanced belief in what he or she could become.

Students also indicated that sometimes an anchor came from deep inside. In these cases, students found they had an internal anchor that gave them the ability to rethink and reconstruct their experiences and thereby reorient themselves. The second type of anchor, an internal anchor, creates what Baser and Morgan (2008, p. 80) called an “operating space,” a place away from external scrutiny in which individuals can make decisions and gain the control and buffering needed to sustain themselves in a difficult context. The use of an internal anchor requires the capability to self-reflect and engage in metacognition (Bandura, 2006). Although internal processes can be employed anywhere and at any time—in contrast to external anchors that are subject to the availability of a significant other—self-reflection, in order to be effective, requires the individual to have the capacity to distinguish faulty from accurate thinking.

In a document on positive youth development, Lerner et al. (2007) reported that, in all settings, the influence of other people—caring, capable, and committed adults who invested in the lives of young people—was the most important factor associated with higher levels of positive youth development and lower levels of problem or risk behaviors. The power and impact of an anchor, whether established informally or through formal programs, was demonstrated repeatedly in the programs studied.

**Efficacy.** Another striking personal-success factor demonstrated by the students who were selected as Ron Brown Scholars was efficacy, or the belief in one’s ability to do a task or accomplish a goal. The efficacy demonstrated in their work was more than a simple belief in themselves; it was a belief grounded in reality. The students believed they could accomplish a goal because they had already cultivated and applied the skills to other successful endeavors.

Efficacy, as defined by Hattie (2008) and Bandura (2006), is the belief that individuals hold about their capability to produce designated levels of performance and to exercise influence over events that affect their lives. Bandura stated that individuals with high self-efficacy approach difficult tasks as challenges to be mastered while individuals with low self-efficacy view difficult tasks as personal threats. Hattie described self-efficacy as a disposition that allows an individual to choose strategies for a particularly challenging situation or to justify why little or no effort is made to approach or complete a task.

**Academic and leadership potential.** Consistently, each of the students selected as a Ron Brown Scholar demonstrates great academic potential. This high academic potential is the result of student response to opportunity as well as individual student effort to cultivate and master successful learning strategies. Zimmerman (2009) wrote that the key to acquiring personal competences is in developing self-regulated learning skills (SRL). SRL skills include three types of processes: self-directive, covert, and motivational. Self-directive processes include planning and goal-setting, self-monitoring and evaluating, and environmental structuring. Covert processes include imagery and verbal self-instruction, and motivational processes included efficacy and adaptation of specific feelings. These
processes provide feedback that allows an individual to adapt to changes in the environment. In addition to the processes and strategies, Zimmerman (2009) identified three learning phases demonstrated by students with academic potential. In the first phase, *forethought*, students perform a task analysis in which learning activities are broken into key components and steps. In the second phase, *performance*, students use self-control and self-monitoring to regulate their performance. In the third phase, *self-reflection*, students examine their reactions to the learning performance. Zimmerman noted that proactive learners demonstrate high quality forethought and performance phase processes, while reactive learners rely on postperformance self-reflection. Students with great academic potential have superior task-analysis skills and are frequently proactive learners (Schunk & Pajares, 2004; Zimmerman & Kitsantas, 1997). Additionally, task analysis requires persistence, efficacy, and self-motivation, positioning proactive students with the dispositions not only to have great academic potential but also to develop capacity to use academic success as a lever for breaking at-risk barriers.

**Building Capacity for Success: Program-Success Factors**

In addition to the personal success factors—resilience, anchor, efficacy, and academic and leadership potential—that contribute to students' growth, programs can be designed to build capacity for students to succeed and attain performance goals. Program-success factors used by the RBSP to cultivate student success include scholarship, contribution to society, leadership, and lifelong connections and collegial support. These factors represent the type of support that students need to build the capacity to turn a vision of success into a reality.

**Scholarship.** Ron Brown Scholars are awarded a 4-year scholarship of $40,000 ($10,000 per academic year). Scholars may use their scholarship to pay for books, tuition, and other educational expenses that might not be covered by financial aid. In addition, during their undergraduate career, all Scholars are fully funded to attend a leadership conference conducted by the RBSP program.

**Contribution to society.** The Scholar Program includes a requirement that all students find a way to give back to society. This service often involves putting Scholars in contact with mentors and resources that will help foster the spirit of philanthropy that inspired the creation of the program. In addition, the program maintains a community-service fund that provides small grants of approximately $2,000 to scholars (both individually and as teams) designed to help launch initiatives aimed at addressing social problems. To date, approximately 10 Scholars' programs have been funded.

**Leadership.** The program places special emphasis on the development of leadership skills among all the Scholars. During leadership conferences, invited
speakers relate their personal stories of how they were able to become leaders within their fields of expertise. In recent conferences, many alumni of the program have been invited to share their own experiences of leadership with younger Scholars. Further, older Scholars are encouraged to begin mentoring younger Scholars, and these mentoring relationships have often led to subsequent opportunities for Scholars to become more active in academic and social communities.

**Lifelong connections and collegial support.** Another unique aspect of the RBSP is the lifelong formation of student cadres. Each student participates in activities with other Scholars admitted during the same year in order to foster a sense of community and connectedness. The program also sponsors yearly regional gatherings and a triennial national conference that brings the majority of Scholars together to discuss topics ranging from professional development to community involvement. Additionally, the RBSP program has a Scholar-run alumni program designed to retain links between former Scholars and foster collaborative projects between Scholars from different selection years.

**Conclusion**

The future of education will include building the learning capacity of students so they can attain success and achieve higher performance. The RBSP illustrates the power and importance of building capacity for success and demonstrates how personal and program factors establish a foundation for building the capacity to learn and improve performance. The personal-success factors provide students with the ability to navigate a wide range of challenges. The program-success factors illustrate how a program can be strategically designed and implemented to build the capacity to achieve specific results. When the program-success factors are set in motion, they can advance or increase the impact of the personal-success factors. The convergence of the factors establishes a foundation for capacity building and enhances the overall possibility of student success.

Malcolm Gladwell, author of *Outliers* (2008), indicated this enlarged success effect is actually predictable. Gladwell, who studied the abilities and circumstances of individuals who made extraordinary accomplishments, found success followed a predictable course. Success was not a simple act of fate, but the result of ability and opportunity—what he called an “accumulative advantage” (pp. 30-31). He stated that outliers, those who achieve exceptionally high performance, were given opportunities or had the fortitude to turn adversity into opportunity and had the strength and presence of mind to seize the opportunities that were available to them. Having the strength is having the capacity to attain higher performance, and having the presence of mind to seize the opportunities requires providing students with learning experiences that are designed and implemented to attain successful results—conditions that the future of education must include for all students.

**References**


The Keys to Future STEM Careers: Basic Skills, Critical Thinking, and Ethics

By Kathleen Ramsey and Barbara Baethe

The United States has lost its competitive edge in math and science education (National Math + Science Initiative, 2013), and work in science, technology, engineering, and mathematics (STEM) is no longer a career of choice. Some studies attribute these trends to lack of student interest (Hall et al, 2011). The authors discuss their experiences and results of informal research that led to their position that students’ level of basic skills, ability to think critically, and ethical commitment are major factors in determining the success and continued interest of science majors.

Introduction

“In 2008, 31 percent of U.S. bachelor’s degrees were awarded in science and engineering fields, compared to 61 percent in Japan and 51 percent in China” (National Math + Science Initiative, 2013). In 2009, “28% of high school freshman declared interest in science, technology, engineering, and mathematic (STEM) careers, but only 12% were still interested as senior students” (NSF.gov, 2013). In 2011, a startling 55% of high school graduates were not ready for college-level math, and 69% were not ready for college-level science classes (NMS, 2013). The result is that 38% of college freshmen who declared as STEM majors do not graduate with a STEM degree (NMS, 2013).

National efforts to address the absence of STEM graduates have focused on funding, increasing participation of minorities and women, new curriculum, science-teacher training, and increased federal involvement (Forbes, 2012; NSF.org, 2012; PCAST, 2010). However, these efforts do not address the fundamental causes of failure of potential science majors that we have seen in our classrooms. In more than 5 years of working with more than 1000 students in community-college and university-class settings, we observed the deciding factor for success in science classes was whether the student possessed fundamental writing, math, and critical-thinking skills and an ethical commitment to persevere in a difficult course of study. We decided to explore these observations in detail by examining perceptions of students in introductory and advanced level science courses. Results for both populations were consistent with the thesis that interest alone was not the deciding factor for student success in science classes.

Research Methodology

Our informal research centered on two populations of students: 140 community-college students in six introductory biology-for-majors courses, and 60 university students
in upper-level biology courses, including *Entomology, Invertebrate Zoology, Microbiology,* and *Environmental Issues and Ethics.* The upper-level courses were a mixture of on-ground and online classes. The same instructor taught both course levels, providing consistent grading criteria across the groups.

Most introductory students reported that they had graduated from area high schools or been home-schooled (2%) in the past 2 to 3 years. About 5% reported they had been out of school for some time. We observed the student population was predominantly white non-Hispanic, approximately 15% Latino, and 2% other minorities, including Asians and African Americans. These demographics were consistent with enrollments in other sections of this course in the department and the surrounding area. In 2012, the average income within a 20-mile radius of the college was $78,668 and, within a 5-mile radius, $96,160 (*The Woodlands Corporation*, 2013). Entrance requirements to the college are an SAT of 1070 with a 500 Verbal/Critical Reading and 500 math score (LSCS, n.d.). No college-level math or writing classes are required for enrollment in this introductory biology course for majors.

Unfortunately, despite emphasis on constructive activities and varied facilitation methods, the success rate for the introductory course averages 50%. This is comparable to statistics for the Biology Department for this course for approximately 2000 students over the past 5 years (*Lone Star College-Montgomery*, 2013).

Because the college does not offer upper-level biology courses, we used a second population of students from a university at which we also taught. The premise was that if students were enrolled in upper-level science classes, they most likely had mastered basic skills and would graduate with a science degree. The university has an open-enrollment policy and provides a series of entry-level classes in its first-year program to address student writing and math inconsistencies. It draws students from the Houston metropolitan area for on-ground courses and internationally for online courses. The student population is 34% Caucasian, 22% African American, 7% Hispanic, and 29% who do not report race (*University of Phoenix*, 2007). The average age of students is 28 years (*University of Phoenix*, 2007).

Two ethical systems were considered: duty-driven or deontological, and relativistic. In duty-driven ethics, a decision is right because it is what one ought to do (*SEP*, 2012). In this case, one ought to take steps in a regular and timely fashion to pass the course. In relativism, judgment and decision-making are relative to the person and what he or she believes is correct in a particular situation (*SEP*, 2008). According to the Barna Group (2002), approximately 75% of Americans are relativists. In the 18-25 year-old group, this number rises to 86%.

**Data Sources**

For introductory courses, we reviewed class exercises, laboratory reports, numerical and word problems, independent experimental-design study, and final grades. Documents in this

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course were submitted electronically. Thus, original work, graded assignments, and final grades for students in the six courses were available for review. After the first exam in each course, we conducted in-class discussions to explore reasons for achievement in the course. For students in upper-level classes, we reviewed course assignments, research papers, and grades. We also held discussions with students about potential career choices in the sciences.

Findings

When we examined data showing student achievement (see Data Sources), several factors appeared to affect students’ success in science courses. These included basic skills in writing, math, and critical thinking, and ethical system as related to class preparation. Within each factor category, we analyzed data with respect to students’ success in the courses, which translated to success in a science major.

Students in introductory courses indicated lack of familiarity with basic writing and mathematics skills. We observed that they struggled with critical-thinking exercises. Most students reported in class discussions that completing class work, including preparation for exams, was secondary to other activities, including emotional attachment to friends, responsibility to family, over-commitment at work, and failure to use study time efficiently. Within this pool of students, failure rate (i.e., a grade of D or F) for each class was 40-60%. This statistic was consistent with departmental findings for this introductory course over the past 5 years (LSC-Montgomery, 2013).

Students in upper-level classes fared better. In comparing student writing with established rubrics, we found good organization, mechanics, and content in research papers. Students indicated that they reserved an average of 16 hours per week for course work. This was consistent with a duty-driven ethic. Approximately 68% of students earned an A or B. Only 10% earned a D or F.

Writing. Introductory students provided a variety of written materials for assessment, including short answers, summaries, papers, notes on speakers, and laboratory reports. They demonstrated difficulty in constructing a proper paragraph. Formatting a paper with introduction, body with section headings, conclusion, and references was problematic. Our evaluation showed approximately 80% of the students did not begin the report with an introduction or thesis statement. Without focus, they rambled from one required element to another, often in a nonsequential fashion. Critical scientific aspects were included haphazardly. Identification of controls was frequently omitted, and treatment options were incomplete. Papers often ended abruptly without conclusion, leaving the reviewer wondering if students understood the problem.

In upper-level classes, students prepared research papers on a variety of topics.
Introductions generally included a short description of the elements in the paper and a thesis sentence. The body addressed the elements of the assignment (e.g., description of the insect, members of the social order and jobs, structure, reproduction, and environmental factors) and usually used one basic level of headings. A conclusion and reference list followed. Some analysis was incomplete, and there was some confusion as to where the analysis stopped and the conclusion began, but, taken as a whole, papers conformed to rubric requirements and students scored well. With format and basic paragraph structure mastered, students were free to explore interesting aspects of the topic, and this exploration made the papers more interesting and engaging.

Mathematics. Introductory students were instructed in the Hardy-Weinberg basic equation \((p + q = 1)\), which determines the frequency of alleles in a population, where \(p\) = the frequency of dominant alleles and \(q\) = the frequency of recessive alleles in steady state. The equation \(p^2 + 2pq + q^2 = 1\) that shows the distribution frequency of homozygous dominant \((p^2)\), heterozygous \((2pq)\), and homozygous recessive individuals \((q^2)\) is a bit more complicated but can be managed with basic addition and multiplication skills.

When students were provided with the information that the frequency of recessive alleles in a population was 30% \((q = 0.3)\), most calculated the correct frequency of dominant alleles as 70% \((p + q = 1)\). However, if students were told that there were 300 pink-nosed cattle with a recessive trait in a herd of 1000 cattle, less than half could calculate the frequency of dominant alleles. If the instructor advanced the question to a determination of the frequency of heterozygous individuals \((2pq)\) in the herd of cows, only about 5% of the students provided the correct answer.

Critical-thinking skill. Introductory students’ critical-thinking and problem-solving skills were measured by evaluation of the completion of an independent chemotaxis study using \(E. coli\). Students had to identify test sugars and prepare a proposal and methodology to assess \(E. coli\) sugar attraction. The format for proposals included purpose with thesis statement, literature research, rationale for sugar choice, laboratory procedures (provided by faculty), timeline, and bibliography.

We evaluated their proposals according to a rubric and noted a lack of understanding of the purpose of the study—to determine the key relationship between sugar structure and bacterial receptor site. Most students included parts of the experimental procedures in the proposal, but not all, making it virtually impossible to obtain meaningful data as students followed their own procedures.

In upper-level classes, students prepared research papers. For example, entomology students completed an integrated pest management plan. They studied and considered pests, crops, abiotic and biotic factors, development, behavioral patterns, and population dynamics to determine what methods best control the pest. They also performed risk/benefit analysis. Students completed cohesive documents in terms of rubric requirements.

Ethical systems and study dynamics. Not surprisingly, we observed a connection between success in class as measured by grade and the amount of time spent studying. More importantly, however, we concluded that patterns of study were directly related to the student’s ethical system, which determines priorities in decision-making. Those students who self-identified or made comments indicating they were duty-driven were more consistent in assignments and exam performance. They used external criteria for right and spent more time studying because studying was what they ought to do. Relativists, who used personal, internal criteria to determine what was right, had variable performance on assignments and inconsistent exam performance. They reported they studied less than
duty-driven students because studying was not necessarily right if the student believed something else was more important at the time and on a routine basis.

Typical college-level classes require outside study time equal to 2 to 3 times contact hours for mastery of the material. In other words, a 6-hour-per-week class requires 12 to 18 study hours (University of Michigan-Flint, 2007). In discussions with introductory students, we found most students studied between 4-6 hours per week. Students reported they were often distracted by friends, social media, family, and work. By contrast, the 6% of students who earned an A in the introductory classes reported spending 15-20 hours per week studying. They reported dedicated study and planning that, although flexible, held them to task. It was noteworthy that all homeschooled students (2% of the students) fit in this latter category, with the exception of one who earned a B. There were few B students in these classes. Upper-level (senior) University students studied an average of 16 hours (University of Phoenix, 2013, p. 22).

Discussion

We used a variety of constructivist methods in the introductory biology course, including models, experiential laboratories, and project-based applications. Lectures were reinforced by student presentations. Students worked cooperatively on in-class activities, laboratory, and group projects. Supplemental Web-based information for the course included lectures, Web links, study guides, chapter notes, sample proposals, interactive tools, and an e-text with electronic flash cards, practice quizzes, and videos. We discussed study skills and time management frequently in class, and departmental counselors offered one-on-one evaluations and custom plans. Faculty led 1-hour study sessions three times a week. None of these strategies affected success rate in these introductory classes, which has remained in the 40-60% range for the past 5 years. Clearly, in addition to basic skill level, an additional element was necessary to student success—ethical commitment.

Writing. Communication is essential in the scientific community and in STEM careers. Inability to produce a cohesive paper in a STEM class means more than lack of basic elementary school skills. It means that individuals cannot communicate with employers and colleagues domestically and globally. It means they cannot write a grant application or corporate proposal. On a global stage, good written communication skills are an asset.

Mathematics. Advanced mathematics was not required in introductory biology classes, but fundamental skills were. The Hardy-Weinberg equations necessary to determine genetic variation at equilibrium require basic math. We explained Hardy-Weinberg equations to students using a variety of methods, including lecture overview, followed by discussion, problem sets, and individual coaching. A group, in-class activity encouraged students to solve sample problems and share the results in presentations to the class. Students were able to use glass beads or soybeans in a laboratory exercise to determine various Hardy-Weinberg frequencies. We provided YouTube videos and links to the Khan Academy (a free Web-based instruction site with an extensive video library, interactive challenges, and assessments at www.khanacademy.org) for additional study. None of these methods or study aids improved understanding as measured by success on the exam questions.

Students who initially were interested in biology became discouraged when they could not complete simple math calculations. The deficiency might have been an issue with basic math skills, reading comprehension, critical thinking—or all three. Regardless, students moved on to other majors.
It is unreasonable to expect instructors in STEM courses to provide sufficient remedial services to enable students to complete work in class. Does one teach basic math or the course content of population genetics? With increasing pressure from college administrators to raise success rates, faculty has to reduce the rigor of class material, which in turn makes American students less competitive in the global STEM career market.

**Critical-thinking skill.** Critical thinking is a fundamental ability in a STEM career. In the introductory chemotaxis assessment, students were unable to make the connection between the scientific question (Was E. coli attracted to different sugars?) and the need to follow experimental procedures that led to reliable data from which valid conclusions were drawn. Experimental procedures were inconsistent even though they were discussed in class, explored in two laboratory practice sessions, and posted on the class Web site.

Basic application of scientific method and precision are necessary for STEM careers. As students struggle with addressing these requirements, they become discouraged and frequently drop the STEM major.

**Ethics and class preparation.** There was a time in the United States when duty-driven ethics prevailed. What was ethical or right was to ask what you could do for your country, not what your country would do for you (NASA, 1963). Many entered STEM careers and assisted in reaching the moon, not because it was easy, but because it was a hard (NASA, 1963). STEM careers flourished, as did research and development of technology for students with the Apollo 13 right stuff. Much of the STEM curriculum is difficult. Solid fundamentals, time, and effort, along with an ethical commitment to right in the long-term are necessary for achievement. Duty-driven ethical systems support this endeavor.

Ethics are quite different today. Relativism is person-centered. To determine what is right, relativists use criteria that include personal preference, emotion, bias, culture, socioeconomic group, gender, age, and any other factor that the individual wishes to use. Right for relativists depends on a variety of personally oriented criteria—time with friends and family, sporting activities, social media participation, work, and any other factor that the student deems important. This ethical system focuses on short-term outcomes, not the long-term view needed to prepare for a STEM career, which requires studying regardless of whether one has personal activities he or she would prefer to be doing. Lack of preclass preparation in STEM classes is problematic for several reasons. For example, sections on DNA replication, translation, and transcription are specific and complicated. Without preclass preparation and even a cursory understanding of terminology and function, students gain little from the initial presentation, discussion, or constructive activities.
Preparing for a STEM career requires a long-term commitment, which relativistic ethics does not easily support. STEM careers are disciplined careers in creativity. Without the discipline and without ethical, duty-driven commitment, creativity achieves no measurable goal.

**Conclusion**

In 2012, the World Economic Forum ranked the United States globally as 27th in math and science education, only slightly ahead of Morocco, Greece, and Romania (World Economic Forum, 2012). With poorly educated American students, many of the 1.2 million science and technology jobs available in the United States in the next 5 years, will go to foreign graduates (STEMConnector, 2012).

Based on our observations and query of students, we concluded that the key to improving student numbers and performance in STEM courses is to produce students who possess a basic skill set that supports the endeavor. Introductory students who lack basic writing, math, critical thinking, and ethical commitment are not successful even if they start the class with enthusiasm. Furthermore, much of the current emphasis in increasing the number of STEM students focuses on constructivist practices and projects. From our observations and informal research, we concluded these practices will not produce the desired result for students who have weak basic skills.

Such skills were more evident in upper-level students in university biology and science courses, who exhibited the ability to write clearly, perform math calculations, and develop research proposals and papers. Perhaps more importantly, however, these basic skills were supported by a more duty-driven approach to classes. Ethically, many today live in the world of relativism. It is no longer common to see a duty, a clear right, to spend 15-20 hours per week per course to learn material, complete assignments, and integrate concepts from STEM courses into students’ thinking. Upper-level students were willing to put in the time and effort in the short term to be successful in the long term—a duty-driven approach.

Looking to the future of education, we concluded that instruction and drill to pass standard tests in elementary school simply will not be enough for success as a STEM major. If a student cannot read or write at grade level or complete simple addition, subtraction, multiplication, and division word problem, and if a student lacks commitment to long-term achievement, he or she has little chance for success in a STEM major or career. A true commitment to increasing the number of American STEM graduates begins with producing students who have basic skills in writing, mathematics, and critical thinking, as well as an ethical commitment of duty to achieving long-term goals.

**References**


Understanding Play as a Powerful Tool to Enable Learning: A Review of *Einstein Never Used Flashcards*

By Lindsey J. Cook


_Einstein Never Used Flashcards_ is a book that points to the parental tendency to bombard children with educational toys and a schedule of structured activities that is bursting at the seams. In essence, the authors of this book encourage a return to simplicity through the immense power of play as an educational tool for both formal and informal education.

Educators have all felt tremendous pressure to cram more material into less time. Everything is driven by standards, student achievement, and testing—so much so that the joy and excitement of learning are often overshadowed by the necessity to check the box and move on before falling behind. In contrast to this trend, the authors of _Einstein Never Used Flashcards_ emphasize the importance of play in the learning process. In fact, they focus a great deal on the process of learning rather than simply looking ahead to the product.

Although this book was published in 2003, the authors’ ideas about critical thinking, ingenuity, and innovation as foundations of learning are integral to shaping the future of education. In an age of instant information, education can no longer be comprised primarily of memorization and facts, and play needs to be recognized and incorporated into formal education as a legitimate and valuable method of learning. The authors urge readers to think how empowering it is for students to grasp a new concept and be given the time and the freedom to utilize that knowledge in a low-stakes, student-directed environment in which information is solidified, not through drill and practice, but through application and exploration.

Kathy Hirsh-Pasek, PhD; Roberta Michnick Golinkoff, PhD; and Diane Eyer, PhD, wrote _Einstein Never Used Flashcards_ in a cerebral style, citing examples of case studies throughout each chapter in order to drive home their assertion that play is a key factor in children’s acquisition of a variety of concepts and skills that go far beyond socialization and interpersonal relationships. Much is said about the way in which the human brain is hardwired for learning and about the roles of parents and teachers as guides. This book is
most certainly geared towards parents of preschool-aged children, but it has implications for educators as well. Although they focus on the emergent learner, the authors assert that the inherent value in the play principle extends far beyond the teen years.

In addition to advocating the reintegration of play into the realm of formal education, the authors also indicate potential backlash from the current trend to push children too far before they are developmentally ready. In the United States, increasing pressure exists to teach more complex skills to younger students, and the authors warn that more harm than good may come from trying to force children to learn content that science has proven to be incongruent with brain development and ability level at such an early age. The authors also briefly address the overscheduled child who is shuffled from one activity to another with little or no down-time; educators see the results of this type of overscheduling first-hand.

Although the authors do an excellent job of laying out a clear and thorough argument in favor of play as a critical method of learning for emergent learners, because they focus primarily on preschool-aged children, they offer little in the way of practical applications for teachers of older students. Specific strategies for implementing play within the constraints of current curricula, especially at the middle and high school levels, are glaringly absent from this book. Educators today face tremendous challenges, not the least of which is the desire to create more innovative thinkers even as less time and opportunity exist for students to pursue learning in creative and thought-provoking ways. Once again, teachers are on their own to forge a path that will bridge the gap between the legislation and the research—to find a way to work within the confines of the current system while providing students chances to thrive.

Overall, play in the classroom is too often seen as superfluous, a mere waste of time. But in *Einstein Never Used Flashcards*, the authors advocate the necessity for all students to be given time in which to experiment and pursue their own interests through play. As they look toward the future of education, educators will be well served by revisiting the idea that young people benefit from low-stakes environments in which they are afforded opportunities to feel safe, take risks, make mistakes, and push boundaries without fear of retribution or failure. Far from being something that should be disparaged, play is the springboard to innovative ideas that will shape the future and transform the world.

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Gateway Tools: Five Tools to Allow Teachers to Overcome Barriers to Technology Integration
By Laren Hammonds, Lisa H. Matherson, Elizabeth K. Wilson, and Vivian H. Wright

Having grown up immersed in technology, the students of today are digital natives, but many of their teachers are often playing catch-up because they are digital immigrants. Furthermore, although new teachers enter the profession comfortable with technology for personal use, they must still be thoughtful regarding the application of technology for instructional purposes. For the paradigm to shift in how technology is used in the classroom, teachers must become more comfortable with its usage and grow in understanding of its value within the classroom. The authors examine some of the identified barriers to technology integration in the classroom and offer teachers several tools to help open the gates to integration.

Introduction
Few teachers truly work in environments devoid of technology. Even in schools where limited funds prevent major technology purchases, tools for connecting, communicating, collaborating, and creating surround them. Students bring tools with them daily in their pockets, purses, and bags in the form of smartphones and other mobile devices. However, many teachers are left unsure about how to engage students with emerging technologies or how to embed technology effectively as a seamless part of instruction.

Today's students and many of today's teachers have grown up immersed in technology. However, when it comes to employing technology as a pedagogical tool, teachers often must play catch-up, while still acting as instructional guides. Often teachers perceive they cannot act as authority figures in their classrooms if they bring in tech tools. Teachers must be at least minimally comfortable with technology use and see the value that these tools can bring to their daily lives before they can consider technology integration as anything more than one more thing required of them. For true change to take place in the classroom, the paradigm shift must begin with the teachers rather than the students. In this article, we examine some of the identified barriers to teacher technology integration and discuss key tools that can provide teachers with the experiences necessary to open the gates for technology integration.

Research
For decades, education experts have heralded emerging technologies as the next big thing to revolutionize teaching. That revolution, however, has yet to arrive, and many classrooms
of today regularly resemble the classrooms of a century ago rather than 21st century centers of learning. Even as schools continue to be stocked with computers, interactive whiteboards, and other technology tools—and despite the fact that many stakeholders walk around with massive computing power in their pockets—the technology integration required to make substantial shifts in education is often lacking.

Belland (2009) defined technology integration as “the sustainable and persistent change in the social system of K-12 schools caused by the adoption of technology to help students construct knowledge (e.g., research and analyze information to solve problems)” (p. 354). Many researchers argue that true classroom technology integration relies on the development and implementation of student-centered learning experiences. Although teachers claim to utilize technology as part of instruction, classroom activities often remain primarily teacher-led.

What, then, causes technology integration efforts to fail? How can schools and districts design professional development to help ensure the integration of technology in order to promote student-led instruction? When adequate technology resources (hardware, software, and internet access) are available, two key factors hinder classroom technology

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use. First, educators are not always skilled beyond basic usage and, thus, must learn how to use the technology itself “as well as how to use it instructionally—a completely different skill” (Mishra, Koehler, & Kereluik, 2009, p. 49). This lack of skill and knowledge may translate directly to a lack of self-efficacy and an absence of the positive attitudes necessary to motivate teachers to use technology (Holden & Rada, 2011). Getting easy-to-use technology tools into the hands of teachers in order to support them in their daily professional tasks can increase technology self-efficacy and open the door to additional technology use.

Additionally, studies suggest that teachers’ value beliefs play a significant role in instructional decision-making, with Ottenbreit-Leftwich, Glazewski, Newby, and Ertmer (2010) arguing that teachers’ beliefs may be the largest barrier keeping teachers from using technology in the classroom. Teachers bring a variety of pedagogical beliefs to the classroom. Years of observation of teachers and administrators in school and of family members at home contribute to their notions of how teaching and learning work. These *folk pedagogies* (Bruner, 1996) stem from personal home experiences and from time as students in the K-12 classroom. Folk pedagogies and personal experiences develop a teacher’s *habitus* “or set of dispositions to appreciate or do certain things” (Belland, 2009, p. 356). Thus, an individual who grew up in a classroom without embedded technology may be unlikely to value technology integration in his or her own classroom.

According to Ottenbreit-Leftwich et al. (2010), professional development can transform habitus only if it is aligned with teachers’ value beliefs. Their study identified the following values:

1. Teachers value technology to improve parent-teacher communication.
2. Teachers value technology that allows them to customize instructional materials to target specific learning needs.
3. Teachers value technology that helps them address professional development needs and communicate and collaborate with colleagues and administrators.
4. Teachers value technology that helps to engage and motivate students.

Thus, tools that are likely to have the most success in transforming teachers’ practice must be aligned with these value beliefs.

**Benefits and Uses—Tasks and Tools**

For the past 8 years, we have participated in Master Technology Teachers, a professional learning group focused on technology integration. As participants in that group, we have worked with a wide variety of tools that have aided us in completing daily tasks. In mentoring other teachers who wish to begin utilizing technology, we have seen that exposure to tech tools for this purpose has the potential to build teacher confidence. The current demands of the profession require teachers to be content developers, behavior managers, and data collectors and analysts. By focusing on tools that help them become more efficient, teachers can first become familiar with the technologies. We recommend the tools below because they get technology into the hands of teachers to help them streamline common professional tasks and are tied directly to teachers’ value beliefs. Providing guidance for teachers in the use of tools such as these can increase their technology self-efficacy and change their habitus, opening the gates to further technology integration.

**Dropbox for resource management and collaboration.** Dropbox (http://www.dropbox.com) is a cloud storage service that allows for easy access to files, so teachers can utilize their resources and plan instruction from anywhere. Additionally, the tool facilitates
file sharing and can aid teachers in collaboration and sharing of resources. Available on a variety of platforms including Windows, Mac, iOS, Android, and Blackberry, free membership in Dropbox currently comes with 2GB of space, although paid subscriptions offer up to 100GB and users may also earn more space by inviting students and colleagues to use Dropbox and by participating in other promotional activities.

**Class Dojo for student behavior management.** Class Dojo (http://www.classdojo.com/) is a free classroom behavior management tool that allows teachers to provide on-time feedback to students regarding individual and group behavior. The program, which can be operated from a computer or mobile device, makes it simple to keep a class motivated and focused by providing students with instant feedback (positive or negative) in class by awarding or subtracting points for specific behaviors. Teachers can customize the program with badges, avatars, and behavioral characteristics specific to their courses. Because students receive feedback immediately, this tool helps maintain student engagement and aids teachers in developing a positive and productive classroom-learning environment. Additionally, Class Dojo can serve as a system for tracking positive behavior intervention and support and can be used for communicating student behavior to parents and administrators.

**Evernote for data collection.** Evernote (http://www.evernote.com) bills itself as the free tool that allows users to capture anything, access it anywhere, and find things fast. It allows teachers to create digital notebooks that help to organize all aspects of classroom life. Within these notebooks, teachers can create notes, tag them for easy access, save files for planning and student documentation, clip webpages, and more, thus creating one resource for housing everything from student data notes to lesson planning materials. Like Dropbox, Evernote allows teachers to access files and notes whenever and wherever they may need them.

At a time when individualized instruction and documentation of student progress are essential, Evernote can be a lifesaver. This tool can replace cumbersome data notebooks or paper-file systems and provides sharing options for easy collaboration and communication among colleagues. It is advisable, however, to have an acceptable use policy to help guide this method of collecting and sharing notes and to ensure privacy protection.

**Social bookmarking for resource management and collaboration.** Collection and curation of online resources for instruction can be overwhelming, but social bookmarking—storing and sharing favorite sites via the cloud—can make this process easier. Free tools such as Diigo (http://www.diigo.com) allow teachers to save their favorite links in the cloud for access anywhere and to share these links with others. Diigo is an abbreviation for *Digest of Internet Information, Groups, and Other stuff.* Diigo creators describe their tool as “two services in one—it is a research and collaborative research tool on the one hand, and a knowledge-sharing community and social content site on the other” (www.diigo.com). In addition to saving and sharing, Diigo users can also tag their links, so collecting, organizing, and accessing lesson-specific resources and other content is easy. Once registered, new users can simply drag and drop a bookmarklet (a JavaScript applet that runs directly in the browser) onto the toolbar in their Internet browser and begin storing and sharing resources.

**Edmodo for content management and communication.** Edmodo (http://www.edmodo.com), a free walled garden social networking site specifically designed for education, can help teachers stay organized and assist teachers who wish to go paperless. Many school systems limit the connections among teachers and students via social media, but Edmodo
is one of the safest alternatives to these limitations. It offers a safe, secure, and easy way for classes to connect and collaborate, allows students and parents to access homework and grades, aids users in sharing content, and provides teachers with a method for notifying students about important information. With Edmodo, students can have access to all their classes in one platform, which promotes student learning any place and at any time, and those familiar with course management systems such as Blackboard and Moodle will find Edmodo user-friendly and inviting.

Registering for an Edmodo account takes moments. Once signed up, teachers can create a group for each class. To join a group, each student must create his or her own account and then enter the code for the group he or she wishes to join. The teacher maintains complete administrative control over the group. In addition to allowing students to complete daily class assignments online, Edmodo also offers quiz and poll features. Students may access Edmodo any time via computer, tablet, or smartphone.

Edmodo is also an outstanding tool for professional development. Numerous professional learning communities are available for teachers to join based on their content areas and professional interests. These communities are great places to exchange information and resources, ask questions, and carry on professional discussions. Teachers can also connect to their colleagues and other teachers they may know on an individual basis.

Concluding Thoughts

It is important to remember that tech tools are just that—tools. They are not the ends in and of themselves but rather the means for assisting teachers in making instruction better. Additionally, the gateway tools presented here are just representatives in a substantial and growing pool of online offerings. As stated in the introduction, we believe that for change to take place in the classroom, the paradigm shift must begin with the teachers rather than the students. When teachers see the value of technology and the impact it can have upon their classroom practices, such awareness opens the gates for further technology integration.

For teachers new to the profession and teachers new to technology, employing tools that streamline professional tasks, such as the ones mentioned above, may act as the springboard to further technology use for classroom learning. Integrating tools such as the ones mentioned in this article and participating in ongoing professional development, formal or informal, will help to build teacher confidence, will demonstrate the value of technology in the classroom, and will increase the use of technology by the teacher. Such integration may help set the stage for students to reap the benefits of technology-embedded instruction well into the future.

References


Enhancing the Future of Education by Actively Supporting Novice Teachers
By Delise Teague and Joyce Swan

As school district leaders face the spiraling problem of losing new teachers during their first 5 years of service, attention has turned to developing induction programs, support services, and mentor relationships for novice teachers. The authors describe one such program, the New Teacher Academy in McNairy County, Tennessee, and the results of the recent program evaluation. Launched in 2006, the New Teacher Academy has evolved dramatically over the years. District personnel have been realistic in the progressive design and growth of the program and instigated a program evaluation based on participant feedback in 2011. Results of the evaluation outlined the directives for immediate changes and continued improvement.

If the future of the world belongs to the next generation, then the future of education belongs to the next generation of teachers. Teacher-education programs are preparing and graduating new teachers at a consistent pace, but these new teachers are leaving the profession at staggering rates and with significant cost to school districts. According to Ingersoll (2004, 2012), between 40% and 50% of all new teachers in the United States leave the profession in the first 5 years. With the cost of employing and training a new teacher estimated at more than $50,000, the loss of a new teacher creates a noteworthy financial loss for the school district (Breaux & Wong, 2003). Cumulatively, such loss translates into a financial cost of teacher turnover in the United States of $7.34 billion annually (National Commission on Teaching and America’s Future, 2007), with a resultant academic loss that cannot be measured (Gujarati, 2012).

Historically, many school administrators have hired their new teachers, handed them a key and a textbook, and left them to make it on their own. Critics characterize the initiation of new teachers into the profession as a grueling trial by fire (Ingersoll, 2004, 2012). The practice of saddling novice teachers with the same responsibilities as teachers with 20 years’ experience and expecting equivalent levels of performance is the norm in schools. To the contrary, novice teachers should be viewed as works in progress rather than as finished products who are equipped to perform with the skill and expertise of veteran educators (Black, 2004; Feiman-Nemser, 2003). Researchers (Buchanan, 2012; Buckley, Schnieder, & Shang, 2004; Gujarati, 2012; Unal & Unal, 2009) found that among the top reasons reported by teachers for leaving the profession are inadequate salaries, poor administrative support, and problems related to student behavior and discipline. Despite the challenges, most new teachers can survive and thrive if they are equipped with quality training and induction support (Ingersoll, 2012; Jarvis & Algozzine, 2006).
How to Address Teacher Attrition

How should school district administrators approach the task of supporting and developing the new generation of teachers? First and foremost, induction into the teaching profession can no longer be a hit-or-miss endeavor, because the turnover rate among teachers is highest during the first 5 years (Ingersoll, 2004). As recipients of public funding, administrative personnel for schools and school districts may choose to invest in proactive measures to retain teachers or in reactive measures that funnel resources into the replacement of teachers who leave the profession (Alliance for Excellent Education, 2005). Formal teacher induction has come to be regarded as an essential, cost-effective component of a comprehensive approach to novice-teacher development (Danielson, 2009). In fact, researchers (Ingersoll, 2012; Smith and Ingersoll, 2004) asserted that the comprehensive induction of new teachers has the potential to cut new-teacher turnover rates in half. Competent new teachers who are properly acculturated into their professional roles and work environments are more likely to remain on the job, in the school, and in the profession (Gujarati, 2012; Ingersoll, 2012; Latham, Gitomer, & Ziomek, 1999).

To attack the problem of attrition directly by facilitating successful entry into the profession, some state education agencies, including the Tennessee School Board, have mandated the provision of mentoring for novice teachers. According to the Executive Director of the Tennessee School Board (G. Nixon, personal communication, December 7, 2009), Tennessee requires that new teachers have a mentor, but the state provides neither funding nor guidelines to insure quality and accountability. Consequently, the administration and quality of mentoring and induction efforts throughout the state are functions of each specific local education agency.

The New Teacher Academy

Vision. Because of a recognized lack of support services for new teachers, leaders of the McNairy County School District in rural West Tennessee embarked upon a mission to devise an aggressive, systematic plan to meet the needs of new teachers as they transition from students of teaching to teachers of students. In 2006, the district leaders launched the New Teacher Academy (NTA), a highly responsive, customized program designed by McNairy County educators for McNairy County educators. In response to a series of
visioning meetings and detailed needs assessments provided by administrators and novice teachers, the administrators established the building blocks of the Academy and hired a veteran educator to coordinate the program, which has evolved significantly over time.

**Development.** The *Tennessee Model for Teacher Mentoring* (Blank & Kershaw, 2009) provided the basis for the district’s preliminary approach to mentoring. From the initial foundation of the district’s NTA, each new hire has been paired with a mentor selected by the respective principals at the eight schools throughout the district.

The Induction Program Development table (Appendix A) details the evolution of the program from its inception to the present. The major components of the 3-year induction program, beyond simple mentoring, and the target audience for whom each is intended are (a) New Teacher Orientation Workshop Day 1 (business; 1st-year teachers); (b) New Teacher Orientation Workshop Day 2 (policy and professionalism; 1st-year teachers); (c) Design and Deliver Workshop (1st-year teachers); (d) Thinking Maps Training (1st-year teachers); and (e) Classroom Organization and Management Program (COMP), 3 ½-day training (2nd-year teachers).

The New Teacher Orientation Workshop consists of a business day, with an emphasis on compensation, benefits, and expectations; and a compliance day, which focuses on key district personnel, policies, and professionalism, with an emphasis on networking and teamwork. *The New Teacher Academy Handbook*, a 10-section, 3-ring binder of documents and resources, guides the progression through the intense 2-day workshop.

The Design and Deliver course is based on Hunter’s Instructional Theory into Practice (ITIP) model (Hunter, 1994) as well as the concept of backward design, the practice of planning instruction by beginning with the end in mind (Wiggins & McTighe, 2005). Although the Design and Deliver course was an optional choice initially, in 2009 it became a standard component of the prescribed professional development plan for new teachers.

Thinking Maps, developed in 1998 by David Hyerle (Designs for Thinking, 2010), are another instructional strategy taught during the first year of the Academy. Each of the eight Thinking Maps is based on a fundamental cognitive skill, providing teachers and students with brain-based tools that help them perform such skills as comparing and contrasting, sequencing, classifying, and reasoning.

Because classroom management is a keystone to success in teaching, comprehensive training in the Classroom Organization and Management Program (COMP) developed by Evertson (COMP, 2004) is an integral component of the induction program. A required 3-day COMP workshop during the summer between the first and second years of employment in the McNairy County School District and a half-day follow-up session during the spring of the following year are the primary areas of focus of the prescribed plan for professional training for second-year teachers.

In addition, each new teacher receives two books: Harry Wong’s *First Days of School* (2009) and Linda Albert’s *Cooperative Discipline* (2003). These resources are referenced and utilized throughout the induction period by administrators, mentors, and district-level personnel.

When Tennessee landed a first-round Race to the Top federal grant, the district leaders allocated a portion of the funds to provide additional school-based induction support. To aid in, and perhaps accelerate, the professional development of novice teachers, a part-time induction coach was established at each of the eight schools at the beginning of the 2010-2011 academic year. Coaches were selected by the respective building-level administrators. Each induction coach is a full-time teacher who receives a stipend to work an extended
contract, providing novice teachers with induction coaching services. The initiative is founded on the work of Barkley (2005), who asserted that the coach may simply represent an extra set of eyes, ears, and hands in the classroom; or, on a more complex level, the coach may function as an expert. In many cases, the teachers receiving the coaching determine the role the coach plays in their interaction.

Evaluation

A formal assessment of the NTA Induction Program was enacted in 2011. Among the instruments used to gather data for this study were the NTA Program Evaluation Survey (Appendix B) and the Teacher Interview Question Protocol (Appendix C). The survey was adapted from a U.S. Department of Education Schools and Staffing Survey (National Center for Education Statistics, 2009) and from a survey of teacher satisfaction, dissatisfaction, morale, and retention developed by Rhodes, Nevill, and Allan (2004). Of the 68 teachers who received the NTA treatment from July 1, 2006 through June 30, 2010, 58 (50 females and 8 males) remained as active teachers in spring 2011 and received an electronic link to the survey. The total of completed surveys returned was 37. Utilizing a ranking method, respondents evaluated the basic components of the program in terms of importance and degree of benefit to the individual's successful induction and resulting job satisfaction. Additionally, open-ended questions provided space for respondents to offer suggestions to aid the school district administrators in improving services to new teachers.

Focus-group interviews provided further insight into the job-specific perceptions of new teachers. To facilitate the focus group process, the program director invited all NTA-trained first-, second-, and third-year teachers to participate in the voluntary forum held in late March 2011. To accommodate teachers’ schedules, they were given a choice of attending any one of three consecutive afternoon sessions. The focus-group interviews adhered to a predetermined interview protocol (Appendix C) to insure the uniformity of the guided conversations. Audio recordings (authorized by participants) and written notes aided in the accumulation and preservation of responses. Of the 49 eligible teachers, 21 (18 females and 3 males) chose to participate, collectively representing six of the eight schools in the district. Information acquired from the focus-group meetings provided qualitative support and clarification of findings from the survey.

Results and Discussion

Ranking of academy components. On the NTA Program Evaluation survey, participants’ ranking of the components of the Academy according to value yielded the following cumulative rankings: (1) COMP; (2) orientation (policy and professionalism); (3) the NTA Handbook; (4) Wong’s First Days of School; (5) mentoring/coaching; (6) Thinking Maps training; (7) Design and Deliver; (8) Albert’s Cooperative Discipline; and (9) Orientation (business).

The failure of a component to earn a top billing led to further study into not just

Although novice teachers respected the wisdom of the veteran teachers, they desired to hear first-hand accounts from individuals who had recently experienced the same challenges that lay in their near future.
what was being delivered but into the degree to which timing and method of delivery might govern effectiveness. The disappointing rating of mentoring and coaching prompted a renewed emphasis on proper mentor selection and training, novice and master pairing, and implementation of a structured mentoring program. In response to the feedback, the formulation of an extensive set of New Teacher Competencies further directed interactions between induction coaches and the novice teachers with whom they work. The scheduling of Thinking Maps training was adjusted from mid-March to mid-October, making the brain-based concept much more likely to be maximized. With the mandated adoption of a new state evaluation model, Design and Deliver was transformed to provide new teachers with a detailed overview of the model, a provision vital to the professional success of each educator. The effects of these changes will be evidenced over time, and necessary adjustments will be made.

Emergent themes. Supplemented the ranked results, responses to the open-ended survey questions and focus-group interviews yielded rich data to inform the process of advancing the Academy. The data gleaned were coded and analyzed for emergent themes and common threads. Three major themes emerged from the analysis of the qualitative data. The themes are presented in isolation to facilitate discussion. In each case, data analysis revealed opportunities for enriching the experiences of new teachers.

New teachers want to hear from recent hires. Although novice teachers respected the wisdom of the veteran teachers, they desired to hear first-hand accounts from individuals who had recently experienced the same challenges that lay in their near future. One teacher expressed this clearly by replying, “Within the past year or so, they were where we are. They know what we’re feeling. They know what’s ahead. Because they’ve been where we are, they can relate to us better than someone who’s been teaching a long time. We need to hear from them.” Acting upon the strength of the feedback, program organizers decided that selected novice teachers will be involved in the delivery of the New Teacher Orientation.

Late hires feel unsupported. Although only a small percentage of the participants were late hires, they made it clear that the induction program had failed them. In the words of one teacher, “I started in January, and I got nothing. I missed all of the training and resources. I didn’t know what was expected of me. I just hit the ground running.” Although late hires received a degree of induction support, primarily administered at the school level, they did not believe it to be the same high level of orientation, induction, and support that traditional hires reported. As a result, program organizers are devising strategies to improve services to late hires, including an extensive collection of resources as well as personal contact from key district-level personnel.

Novices want to feel valued. Because they are held to the same high standards as veteran teachers and expected to produce comparable student achievement results, novice teachers desired to be valued by their colleagues and superiors. One teacher worded this view quite
succinctly: “People are hungry to be valued.” When they do not feel valued, teachers may perceive themselves as excluded in the decision-making process. As one teacher explained:

In the school I feel like an infantryman—kind of a foot soldier just taking marching orders—but as an athletic coach I feel that my opinion is needed and welcomed. We all work together out there, and we do a good job staying together. We realize that one person can’t make all of the decisions.

Another teacher sensed her value was reduced to twilight relevance by the school administration and stated, “I’m not sure one of my administrators even knows my name. I’m not sure I matter. I don’t even know if he knows what I teach.” These startling insights were enlightening and extraordinarily instructive, disclosing the immediate necessity to improve school-level support of new teachers.

Conclusions

The district leaders maintain a commitment to responsiveness and quality delivery of services as they monitor all aspects of the NTA program in the interest of continuous improvement. If novice teachers are to be competent, satisfied professionals who persist in teaching as a career, their induction into the profession cannot be left to chance. The NTA provides the framework for an intentional and cost-effective approach to meeting the needs of new teachers by providing intensive support in Year 1, moderate support in Year 2, and available (as-needed) support in Year 3. Novice teachers hone their skills under the watchful eyes of master teachers. The Academy is designed to accelerate the progression of each participant beyond the stages of fantasy and survival, into mastery and impact (Wong & Wong, 2009). This depiction of a new-teacher induction program developed and reviewed over a 7-year span is offered as a viable starting point for others who are embarking upon a similar journey.

References


## Appendix A

### Induction Program Development Chart

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Appendix B
New Teacher Academy Program Evaluation

*Indicates a required question

SECTION I

1. Which entry classification best reflects your entry into the ranks of McNairy County teachers?*
   a. Recent Graduate (I did not teach the previous year; I was a college student)
   b. Delayed Entrant (I did not teach the previous year, nor was I a college student)
   c. Transfer (I changed school systems either voluntarily or involuntarily)
   d. Returning Teacher (I taught elementary, middle, or high school for at least a year, then left and returned)

2. Of which generational cohort are you a member?*
   a. Veterans (born 1926-1945)
   b. Baby Boomers (born 1946-1965)

3. Did you enter teaching through an alternative certification program?* An alternative program is a program that was designed to expedite the transition of non-teachers to a teaching career (for example: a state, district, or university alternative certification program).
   a. Yes
   b. No

4. Have you taken any graduate or undergraduate courses that focused on teaching methods or teaching strategies?* Include courses you have taken to earn a degree and/or courses taken outside a degree program. Do not include student teaching.
   a. Yes
   b. No

5. How long did your practice teaching last?*
   a. I had no practice teaching
   b. 4 weeks or less
   c. 5-7 weeks
   d. 8-11 weeks
   e. 12 weeks or more
   f. Other: ______________________________________________________

6. If you could go back to your college days and start again, would you choose to become a teacher?*
   a. Certainly would become a teacher
   b. Probably would become a teacher
   c. Chances are about even (50/50) for and against
   d. Probably would not become a teacher
   e. Certainly would not become a teacher

7. How long do you plan to remain in teaching?*
   a. As long as I am able
   b. Until I am eligible for retirement benefits from this job
   c. Until I am eligible for retirement benefits from another job
   d. Until I am eligible for Social Security benefits
   e. Until a specific life event occurs (e.g. marriage, parenthood)
   f. Until a more desirable job opportunity comes along
   g. Definitely plan to leave as soon as I can
   h. Undecided at this time
8. a. During your first year in teaching, were you provided with a common planning time with teachers in your subject or grade level?* If your first year as a public school teacher was not in the McNairy County School System, select NA.
   a. Yes
   b. No
   c. Not Applicable (NA)

8. b. During your first year in teaching, were you provided with seminars or courses for beginning teachers?* If your first year as a public school teacher was not in the McNairy County School System, select NA.
   a. Yes
   b. No
   c. Not Applicable (NA)

8. c. During your first year in teaching, were you provided with ongoing guidance or feedback from a master or mentor teacher?* If your first year as a public school teacher was not in the McNairy County School System, select NA.
   a. Yes
   b. No
   c. Not Applicable (NA)

8. d. During your first year in teaching, were you provided with regular supportive communication with your principal, other administrators, or department chair?* If your first year as a public school teacher was not in the McNairy County School System, select NA.
   a. Yes
   b. No
   c. Not Applicable (NA)

SECTION II
9. a. Listed below are 12 facets that contribute to job satisfaction or dissatisfaction. Please rate each for its importance to your job satisfaction.*

1-no importance; 2-low importance; 3-neutral; 4-important; 5-highly important

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<th>Facets Contributing to Teachers' Job Satisfaction</th>
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<td>Administrative support for teachers</td>
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<td>Autonomy over my teaching; opportunity to show initiative</td>
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<td>Balance between work and personal life</td>
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<tr>
<td>Workload</td>
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9. b. From the facets named in question 9a, list the three most deeply satisfying.* Choose the facets that are most likely to lead to your staying in the profession for the next five years.

9. c. From the list of facets named in question 9a, list the three most deeply dissatisfying.* Choose the facets that are most likely to lead to your leaving the profession within the next 5 years.

10. Listed below are the 8 primary components of the New Teacher Academy Induction Program, provided to benefit you in the induction process. Please rate each on the degree to which it satisfied your initial training needs.*

1-no importance; 2-low importance; 3-neutral; 4-important; 5-highly important

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<td>Resource: New Teacher Academy handbook</td>
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11. a. From the list of NTA components in question 10, rank the four which were most beneficial to your acculturation into the teaching profession.*
   a. First: ____________________________________________
   b. Second: _________________________________________
   c. Third: __________________________________________
   d. Fourth: _________________________________________

SECTION III

Please provide suggestions (relevant to the subjects outlined below) to help the McNairy County school system improve services provided to new teachers.

12. a. Induction (overall new teacher induction program) ____________________________________________

12. b. Mentoring/Coaching ____________________________________________

12. c. New Teacher Academy Handbook ____________________________________________

12. d. New Teacher Orientation (policy/professionalism; business) ____________________________________________

12. e. What was your greatest UNMET (professional) need as a novice teacher in the McNairy County school system? ____________________________________________
Appendix C
Novice Teacher Interview Protocol

Teacher __________________________________________
Year of Hire __________
Years of Service __________
Entry Classification __________________________________________
Birth Year/Generational Cohort (________) _______________________________
Entry Route __________________________________________

Grade Level

1. To what degree did your pre-service education prepare you for success as a classroom teacher? (1 to 10; 10 high)
2. How effective was your student teaching experience in preparing you to transition from student of teaching to teacher of students?
3. How did the reality of your first teaching assignment differ from your expectations about that job?
4. What role should the school district play in transitioning and initiating a new teacher into his or her teaching job?
5. What role should the school play in transitioning and initiating a new teacher into his or her teaching job?
6. How important is placement to a teacher’s performance? job satisfaction?
7. To what degree does a professional colleague at your school provide emotional support?
8. To what degree does a professional colleague at your school provide professional support (help/collaboration that makes you a more effective teacher)?
9. Do you routinely meet with/plan instruction with colleagues?
10. To what degree do you believe your thoughts/ideas/opinions are valued at your school?
11. Do you have a mentor at your school? If so, who established the mentor/protégé relationship? Describe the nature and benefits of the mentoring partnership.
12. What measures should the McNairy County school system take to improve New Teacher Academy, our system for inducting new teachers into teaching jobs, the school system, and the teaching profession? Specifically, what should be added? deleted? improved?
Chapter Checkup and Strengthening: The Colorado State Organization Model
By Loretta B. Kerr and Sue L. Pettit

Many local chapters of Delta Kappa Gamma are struggling to attract and maintain membership. As a result, and in response to international initiatives, state organization leaders must promote strong training, discussion, and strategic planning to reverse this dismal trend. The authors share the results of work at the 2012 Colorado State Organization Leadership Conference, where chapter leaders collaborated to find a chapter-strengthening strategy that might work across the state—a strategy that would support chapter cultures and void disinterest and weak participation at all levels. State leaders are training chapter leaders in use of the Chapter Checkup Rubric and strengthening process, and initial results suggest that chapters using the rubric are revitalized and individual members are excited about leading into the future and inviting new members to join.

Is your Delta Kappa Gamma chapter as healthy and as vibrant as it used to be? How long has it been since your chapter had a good-healthy check up? Would you use a thermometer to determine if your chapter meetings are cold or warm and inviting, a stethoscope to determine if your chapter has a strong heart, or a tuning fork to see if your leaders can hear what their members are saying? Probably not, but what instrument would be useful in helping a chapter assess its health status, and is such an instrument available?

Healthy Membership Begins at the Chapter Level
Delta Kappa Gamma (DKG) is a member-led, grass roots organization. State organization boards and local chapters are encouraged and supported by international officers and committees to lead, innovate, and inform members about the relevance and renewal of the DKG Mission. The democratic framework, as set forth by founder Annie Webb Blanton, is a critical feature of the Society and places the responsibility for success concerning membership retention into the hands of every dues-paying member. Understanding that the Society is a bottom-up organization is especially critical at a time when membership and chapter loss are at an all time high—a point in time when teachers need the Society’s increased support and encouragement to stay and succeed in the field of education.

DKG membership is enormously diverse and multicultural in character, and, having transferred our membership from one state and region to another, we can testify from our experience that each chapter is uniquely different and beautiful in its own right. Although strongly coupled with the international organization's mission, seven Purposes,
and international strategic plan, members of each chapter make their own decisions about operations and branding. In addition, members of each chapter establish long-standing traditions and social celebrations that find their way into the yearly decision-making and culture. It could be said, then, that member retention and attraction are localized challenges to overcome.

Through chapter surveys conducted at the international level (Souders & Popovich, 2009), a case has been made that successful chapters and growing chapters operate similarly by (a) organizing a wide variety of high-quality, interesting programs and speakers; (b) including programs that highlight community initiatives, especially for women and children and to promote literacy; (c) using members’ talents and expertise; (d) supporting projects in the areas of mentoring, fundraising, and volunteering; (e) communicating with members in multiple ways, such as newsletters, Web sites, phone, e-mail, and snail mail; and (f) offering benefits and services that members cannot get elsewhere, including chapter scholarships, grants, interaction among a diverse group of educators, friendship and camaraderie, and service to community. These research data are readily available but in most cases have not informed changes at the chapter level. Many chapters continue to shrink, and some dissolve. Members often become apathetic and disconnected from the purposes of the Society. At the chapter level, state organization level, or international level, members cannot over-discuss or work on this problem enough.

Chapters must inherently be self-regenerating with respect to membership and quality of programming. If chapter programs are not interesting and relevant, current members may be hesitant to invite new members into the chapter. Also, the more a chapter’s membership ages and the longer members are retired, the more removed they are from first-hand knowledge of the qualifications of prospective members to invite to membership. With dwindling chapter membership, the responsibility for leadership and committee functions falls on the shoulders of fewer members, potentially leading to burnout. Unfortunately, however, a sense of urgency for increasing membership is, for the most part, nonexistent at the chapter level.

Leading for Healthy Change

Even though the responsibility for maintaining and increasing membership lies with each individual chapter, can the state-level organization have an influence on individual chapters? Leaders of Omega State (Colorado) believe it can. State leaders are engaging members across the state in discussions, are making numerous chapter visits, and have appointed an ad hoc committee for chapter strengthening. Utilizing online conferencing offered through the international organization, that committee has brainstormed problems and solutions related to chapter strengthening. Chapter
Strengthening Committee members noted that chapters, although responsible for their own health, may not have the tools to self-assess and reinvent themselves. Building on the work of Souders and Popovich (2009), the committee opted to develop an instrument in rubric form that chapters can choose to use for a self-assessment or Chapter Checkup.

Research indicates that rubrics empower participants to self-assess according to their own needs; set unique, strategic goals; and monitor and measure progress over a period of time (Center for Advanced Research on Language Acquisition, 2013). Omega State Organization leaders hoped that a reflective and autonomous process using a self-assessment rubric would create member awareness and bring about change to meet the needs of an evolving profession.

The Chapter Checkup Rubric

The Chapter Checkup Rubric (see Appendix) was born at the Omega State 2012 Leadership Conference, Hands Across the Rockies. A qualitative, action-research study design was used to collect input from approximately 90 DKG members. Following a short skit that compared a few medical tests to what a healthy chapter might be like, conference attendees from all across Colorado were asked to work in small collaborative groups to brainstorm and explore the dimensions or criteria of a strong chapter. Then, using the dimensions that attendees identified, they created a three-cell rubric by writing descriptors with the progressive headings of dream chapter, healthy chapter, and struggling chapter.

More dimensions and corresponding descriptors specific to a chapter can be added to the rubric as needed. For example, one chapter that uses grocery-chain rebate cards for a chapter scholarship fundraiser determined that this activity should become a part of their chapter-strengthening criteria. The rubric descriptors progressed from “everyone uses grocery-chain rebate cards to raise funds for our scholarships” to “75% of members use grocery-chain rebate cards” to “a few members consistently use grocery-chain rebate cards.”

The beauty of the rubric is that it is flexible and invites members of each chapter to modify the categories and descriptors to meet their own needs. The rubric enables members to focus on strengths as well as areas in need of improvement.

Data from the resulting twelve rubrics were entered into a spreadsheet, sorted by dimensions, reviewed, and summarized. Those Chapter Strengthening Committee members gathering the data and involved with summarizing endeavored to maintain the intent and essence of the member-generated descriptors. Some of the dimensions identified by members included communications, connection to International, connection to State, finances, leadership, marketing, meetings, membership, participation, vision, and renewal. For a complete list, refer to the Appendix.

Chapter Checkup Rubric Becomes More Formalized

Building on the Chapter Checkup Rubric foundation, a Chapter Strengthening Process was developed. The process involves conducting a chapter checkup by asking each member of the chapter to rate indicators on the rubric. For example, for the dimension Leadership Training, members can select one descriptor from the progression: 1) training provided for officers and members, 2) training limited to officers, or 3) officers not trained. The data are compiled and reviewed by the whole group or by a designated ad hoc committee. Reviewers should note the positives indicated by the data as well as areas needing improvement. Next, the fundamental causes for three to five areas are determined using a strategy such as the 5 Why’s (Mind Tools, n.d.), which essentially works to get to the root cause of a problem.
by continuing to answer the question “why?” Then, possible solutions are brainstormed to resolve each problem cause.

**Chapter Checkup Survey**

The next step is to incorporate the possible solutions into a survey given to all chapter members so that they have an opportunity to provide additional input. The whole group or the designated committee reviews survey results and, based on the data, drafts recommendations for strategic change. Recommendations are then presented to the entire chapter for approval. Once approved, the recommendations can be included in the chapter’s Strategic Action Plan (SAP) and assumed by the appropriate chapter committee or chapter members for implementation. Ideally, the chapter will conduct a chapter checkup or SAP implementation review annually and will then revise or modify the SAP as needed.

**Evaluation of the Chapter Checkup Rubric**

To date, the Chapter Checkup Rubric and Chapter Strengthening Process have been presented to six chapters and to attendees of the State Executive Board Meeting by members of Omega State’s Chapter Strengthening Committee. Plans are being made to provide chapter-strengthening facilitation training for committee members, thereby making assistance more readily available to requesting chapters. GoToMeeting conferencing will also be utilized whenever possible to make sharing the process more fiscally feasible.

Having recently used a similar chapter-strengthening process in her chapter, one of us has witnessed a remarkable increase in member enthusiasm and involvement in chapter projects and business. During the Chapter Strengthening Process, chapter members indicated that they appreciated the request for their input and for the reporting of the resulting data that were the basis for recommended changes. We believe that going through the process was an extremely beneficial experience for all involved and are excited about the resulting chapter renewal and prospects for growth. A chapter that was at risk of dissolution has been re-energized.

**On the Road to Revitalization in Colorado State Organization**

Declining chapter membership and dissolution do not have to be the reality for Omega State Organization and Delta Kappa Gamma International. Omega State is committed to meeting the challenge of declining membership by utilizing the Chapter Checkup Rubric and the Chapter Strengthening Process as tools of progress. The leaders of Omega State are excited to press forward with this initiative as we move into a revitalized 2013-2015 biennium.

**References**


## Appendix

### Chapter Checkup Rubric

<table>
<thead>
<tr>
<th>Dimensions (Criteria)</th>
<th>Dream Chapter (Descriptors)</th>
<th>Healthy Chapter (Descriptors)</th>
<th>Struggling Chapter (Descriptors)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chapter Officers</strong></td>
<td>Very well informed on focus of DKG</td>
<td>Working to develop understanding of job</td>
<td>Unsure of role</td>
</tr>
<tr>
<td><strong>Communications</strong></td>
<td>Using more than three methods or strategies, i.e. online (website, blogs, Google Calendar, tutorials, email), newsletter, phone tree, face-to-face, etc.</td>
<td>Using three methods or strategies outlined in “Dream Chapter”</td>
<td>Limited to one or two methods or strategies outlined in “Dream Chapter”</td>
</tr>
<tr>
<td><strong>Connection to International</strong></td>
<td>Chapter pays all or part of the expense for at least one representative to attend international meetings, i.e. International Convention, Southwest Regional Conference, etc.</td>
<td>At least one representative attends international meetings as outlined in “Dream Chapter”</td>
<td>Little or no interest—no attendance at international meetings</td>
</tr>
<tr>
<td><strong>Connection to State</strong></td>
<td>Chapter pays all or part of the expense for at least one officer and one member to attend state meetings, i.e. board meetings, state convention, state leadership conference, etc.</td>
<td>At least one officer and one or more members attend state meetings as outlined in “Dream Chapter”</td>
<td>Little or no interest—no attendance at state meetings</td>
</tr>
<tr>
<td><strong>Finances</strong></td>
<td>Raises enough money to cover chapter expenses, current projects, and fund new projects, i.e. World Fellowship, scholarships, grants-in-aid, classroom support, local and/or international projects, attendance at state and/or international meetings, etc.</td>
<td>Raises enough money to cover chapter expenses and some projects as outlined in “Dream Chapter”</td>
<td>Raises enough money to cover chapter expenses and fund no projects outlined in “Dream Chapter”</td>
</tr>
<tr>
<td><strong>Leadership</strong></td>
<td>Leadership extends beyond the chapter, shares responsibilities, and participates in state and international meetings</td>
<td>Members want to be leaders and receive the training to be successful</td>
<td>Have to beg members to take leadership roles / no one wants the job</td>
</tr>
<tr>
<td><strong>Leadership - Energy</strong></td>
<td>High energy; many leaders</td>
<td>A few strong leaders</td>
<td>One person doing work, low involvement</td>
</tr>
<tr>
<td><strong>Leadership - Training</strong></td>
<td>Training provided for officers and members</td>
<td>Training limited to officers</td>
<td>Officers not trained</td>
</tr>
<tr>
<td><strong>Legislation</strong></td>
<td>Members are well informed on educational issues, active, and involved in advocacy dissemination, i.e. blogs on legislation, contact with legislators, Google Calendar, etc.</td>
<td>Members are aware of current legislation</td>
<td>Apathy, unaware of current legislation</td>
</tr>
<tr>
<td><strong>Marketing</strong></td>
<td>All media are regularly utilized including online resources, i.e. web sites, blogs, etc.</td>
<td>Some media are utilized, scholarships / grant-in-aid, DKG promoted at schools</td>
<td>No communication</td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
<td>Results</td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td></td>
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<tr>
<td><strong>Meeting Attendance</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>75% + attend Chapter meetings</td>
<td>Chapter members are surveyed each biennium to determine optimal meeting day, time, and/or location</td>
<td>Meeting day, time, and/or location are convenient for most members</td>
<td></td>
</tr>
<tr>
<td>50% to 75% attend meetings</td>
<td></td>
<td>Meeting day, time, and/or location conflict with members’ schedules</td>
<td></td>
</tr>
<tr>
<td>Less than 50% attend meetings</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Membership</strong></td>
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<tr>
<td>Increase membership by the rate of attrition plus more than 10% / year</td>
<td>Increase membership by the rate of attrition plus 10% / year</td>
<td>Membership remains same or decreases</td>
<td></td>
</tr>
<tr>
<td><strong>Membership Diversity</strong></td>
<td>Variety of experience</td>
<td>Increasing varieties of experience</td>
<td></td>
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<tr>
<td></td>
<td>No variety of experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Participation - Engagement</strong></td>
<td>Over 80% engaged in chapter activities and projects</td>
<td>50 - 80% engaged in chapter activities and projects</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Less than 50% engaged in chapter activities and projects</td>
<td></td>
</tr>
<tr>
<td><strong>Participation - Member</strong></td>
<td>Every member willingly shares in work load for committees, projects, hosting, etc.</td>
<td>All positions are voluntarily filled</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Many unfilled positions</td>
<td></td>
</tr>
<tr>
<td><strong>Personal/Professional Growth</strong></td>
<td>Certificate renewal credit for conferences, scholarships for members, and programs that stimulate personal and professional growth</td>
<td>Programs that stimulate personal and professional growth</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Programs that do not stimulate personal and professional growth</td>
<td></td>
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<tr>
<td><strong>Programs</strong></td>
<td>Have blue ribbon programs, i.e. interesting, current, relevant, varied, entertaining, interactive, engaging, timely, and/or exciting, at every meeting with a balance between personal and professional topics, are specific to the 7 DKG Purposes, and draw in other teachers</td>
<td>Have blue ribbon programs specific to the 7 DKG Purposes for at least 50% of the meetings as described for a “Dream Chapter”</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>No programs, poor programs, or programs with lack of focus</td>
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</tr>
<tr>
<td><strong>Projects</strong></td>
<td>More than 4 projects that are outside of ourselves, aligned with 7 DKG Purposes, involve a majority of members and with involvement in at least one of the International projects</td>
<td>2-4 projects that are outside of ourselves, aligned with 7 DKG Purposes, involve up to 50% of members and with involvement in at least one of the International projects</td>
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</tr>
<tr>
<td></td>
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<td>One or no projects</td>
<td></td>
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<tr>
<td><strong>School - Involvement</strong></td>
<td>Every member voluntarily in a school / mentoring young teachers or chapter adopts a school</td>
<td>Some mentoring and volunteering, donations</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>No connection to a school</td>
<td></td>
</tr>
<tr>
<td><strong>School - Mentoring</strong></td>
<td>Consistent, well-managed mentoring program for new teachers</td>
<td>Some mentoring of new teachers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Limited or none; inconsistent</td>
<td></td>
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<tr>
<td><strong>Vision / Renewal</strong></td>
<td>Working to improve</td>
<td>Some attempts / progress</td>
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<tr>
<td></td>
<td></td>
<td>Stagnation</td>
<td></td>
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</tbody>
</table>
Bulletin Submission Guidelines

Submissions from members will be accepted for review provided that:

- The submission is not being considered concurrently in whole or substantial part by another publisher.
- The Bulletin has exclusive option of possible publication for a period of 6 months following receipt of the submission.
- The author assumes responsibility for publication clearance in the event the submission was presented at a professional meeting or is the direct product of a project financed by a funding agency.
- Authors are responsible for accurately citing all quoted and bibliographic materials and for obtaining permission from the original source for quotations in excess of 150 words or for tables or figures reproduced from published works.
- Co-authors are permitted. At least one author must be a Delta Kappa Gamma member.

Manuscript Preparation

- Although there is a suggested theme for each issue, manuscripts on all topics are welcome.
- Manuscripts should be focused, well organized, effectively developed, concise, and appropriate for Bulletin readers. The style should be direct, clear, readable, and free from gender, political, patriotic, or religious bias. Topic headings should be inserted where appropriate.
- Please see Submission Grid on the following page for specific requirements of the types of manuscripts appropriate for publication.
- Double space the entire manuscript, including quotations, references, and tables. Print should be clear, dark, and legible. Pages must be numbered.
- References should refer only to materials cited within the text. Nonretrievable material, such as papers, reports of limited circulation, unpublished works, and personal communications, should be restricted to works absolutely essential to the manuscript.
- Abbreviations should be explained at their first appearance in the text. Educational jargon (e.g., preservice, K–10, etc.) should be defined as it occurs in the text.
- Place tables and figures on separate pages at the end of the manuscript. Use Arabic numerals and indicate approximate placement in the text.
- Photos, graphics, charts, etc. that may enhance the presentation of the manuscript may be included. Contact the editorial staff (bulletin@dkg.org) for information regarding the use of photos.

Submission

- One submission per author per issue.
- Submit electronically, in Microsoft Word format, to bulletin@dkg.org. Do not submit PDF files. For a manuscript, include definitive abstract, photo of author(s) [see below], and biographical information. Biographical information must include author(s) name(s), occupational position(s), Society and professional affiliations (list offices held), address(es), phone number(s) and e-mail address(es).
- Electronic/digital photo files must be saved in JPG or TIFF format and must be a minimum of 1.5" x 1.5" with a 300 dpi resolution. For photos submitted to enhance text, include caption/identification information.
- For poems and graphic arts, submit name, address, and chapter affiliation. A photograph is not required.
- All submissions will be acknowledged and assigned a review number within 2 weeks. Contact the editor at bulletin@dkg.org if you do not receive timely acknowledgement of your submission.

Publication of Submissions

- Published authors will receive five complimentary copies of the Bulletin in which their article appears.
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- The editorial staff reserves the right to make changes of a nonsubstantive nature.

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## Bulletin Submission Grid

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<tr>
<th>Submission Type and Description</th>
<th>Word Length</th>
<th>Abstract or Introduction</th>
<th>Documentation</th>
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</thead>
<tbody>
<tr>
<td>Action/Classroom Research: Organized, systematic, and reflective observation of classroom practice that also addresses areas of concern.</td>
<td>1,500-4,000</td>
<td>Abstract</td>
<td>Required</td>
</tr>
<tr>
<td>Qualitative/Quantitative/Mixed Methods Research: Essentially narrative with nonstatistical approaches and a focus on how individuals and groups view and understand the world and construct meanings from their experiences (Qual)/Gathers and analyzes measurable data to support or refute a hypothesis or theory through numbers and statistics (Quan)/Utilizes both qualitative and quantitative data to explore a research question (Mixed).</td>
<td>1,500-4,000</td>
<td>Abstract</td>
<td>Required</td>
</tr>
<tr>
<td>Position Paper/Viewpoint: Defines an issue; asserts clear and unequivocal position on that issue, and argues directly in its favor.</td>
<td>1,000-1,500</td>
<td>Abstract</td>
<td>Required</td>
</tr>
<tr>
<td>Review of Literature: Presents supporting and nonsupporting evidence on a topic of interest and value to educators; synthesizes and critiques the literature; draws conclusions; describes procedures for selecting and reviewing literature; may include narrative review, best-evidence, synthesis, or meta-analysis.</td>
<td>1,500-3,000</td>
<td>Abstract</td>
<td>Required</td>
</tr>
<tr>
<td>Program Description: Provides an overview and details of a single program in an educational setting. Goals, resources, and outcomes are included. No marketing or promotion of a program is allowed.</td>
<td>1,000-1,500</td>
<td>Abstract</td>
<td>Encouraged</td>
</tr>
<tr>
<td>Book/Technology Review: Combines summary and personal critique of a book, Web site, or app on an educational topic or with educational relevance.</td>
<td>400-700</td>
<td>Introduction</td>
<td>Required</td>
</tr>
<tr>
<td>Letter to the Editor: Responds to materials previously published in the Bulletin; must include author's name and chapter/state of membership.</td>
<td>200-300</td>
<td>NA</td>
<td>Not required</td>
</tr>
<tr>
<td>Poetry/Graphic Arts: Original expressions in any brief poetic format or through drawings, sketches, etchings, woodcuts, photographs, cartoons.</td>
<td>NA</td>
<td>NA</td>
<td>Not required</td>
</tr>
</tbody>
</table>

NOTE: More detailed explanations of each category may be found on the Bulletin page in the Library at www.dkg.org.