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## Message from the Executive Editor

Vera I. Daniels

*Joseph Kermit Haynes-Casino Rouge Endowed Professor*

It is my pleasure to present to you the first issue of the *Interdisciplinary Journal of Teaching and Learning* in my tenure as executive editor.

The *Interdisciplinary Journal of Teaching and Learning* (IJTL) is a scholarly triple-blind peer reviewed open access electronic refereed journal that welcomes research and scholarly papers on important topics, theoretical perspectives, current issues, practices, and strategies related to teaching and learning in PK-12 and higher education settings that embrace and contribute to effective teaching and learning. This journal strives to be highly interdisciplinary in content that is likely to be of interest to teachers, principals, other school administrators, policymakers, graduate and undergraduate students, researchers, and academicians. The IJTL is published three times each year by the College of Education at Southern University - Baton Rouge. Publication occurs in the Spring, Summer, and Fall.

I am proud of this inaugural issue. It is novel and complementary to other existing outlets that embrace and contribute to effective teaching and learning. I believe the articles contained herein provide information that is of practical use and value to PK-12 teachers, administrators, teacher education candidates, and professionals in higher education.

I owe a debt of gratitude to everyone involved with the publication of this journal, especially the editorial board, board of reviewers, and contributors. I also extend my gratitude to the Office of Technology and Network Services for their indispensable support and assistance.

I am very excited about the publication of this journal and look forward to future publications.

Thanks to all of you for your support and contributions.

VID

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## Purpose

The Interdisciplinary Journal of Teaching and Learning (IJTL) - formerly the E-Journal of Teaching and Learning in Diverse Settings, is a scholarly triple-blind peer reviewed open access electronic refereed journal that is published three times each year by the College of Education at Southern University - Baton Rouge. Publication occurs in the Spring, Summer, and Fall.

The IJTL is designed to provide opportunities for divergent ideas, views, and opinions on various topics and issues from professionals in diverse disciplines and professional arenas. It strives to be highly interdisciplinary in content that is likely to be of interest to teachers, principals, other school administrators, policymakers, graduate and undergraduate students, researchers, and academicians.

Manuscripts that focus on special education, general education (including subject content areas), bilingual education, cultural and linguistic diversity, innovative methods in teaching, assessment, exemplary programs, technology (assistive and instructional), educational leadership and reform, public policy, current issues and practices, and research relevant to education are encouraged.

Manuscripts submitted to the IJTL should be interesting, innovative, informative, well documented, and have practical value that embrace and contribute to effective teaching and learning.

## Call for Manuscripts

The Interdisciplinary Journal of Teaching and Learning (IJTL) welcomes submissions that contribute to effective teaching and learning. It provides a forum for the dissemination of articles focused on a wide variety of topics and content subject areas.

The IJTL is comprised of four departments -- Feature Articles, Educational Tweets, Online Resources, and the Event Zone.

**Feature Articles** provide scholarly articles on important topics, theoretical perspectives, current issues, practices, strategies, and research related to teaching and learning in PK-12 and higher education settings. All manuscripts submitted to this department undergo a triple-blind peer review.

Manuscripts for feature articles may be submitted by faculty, graduate students (whose work is co-authored by faculty), school administrators, policymakers, researchers, classroom teachers, and other practicing educators on current and compelling educational topics, issues, practices, and concerns at all levels (PK-12 and higher education) from a wide range of disciplines.

Manuscripts that focus on special education, general education, bilingual education, cultural and linguistic diversity, innovative methods in teaching, assessment, exemplary programs, technology (assistive and instructional), educational leadership and reform, public policy, current practices and issues, and research relevant to education are encouraged. The manuscripts should be

interesting, informative, well documented, appeal to the IJTL diverse audience, and have practical value that embrace and contribute to effective teaching and learning.

Additionally, the manuscripts should be original, well written, and offer new knowledge or a new and insightful synthesis of existing knowledge that has significance or importance to education. They should also have a solid theoretical base and offer an appropriate blend of teaching and practice. The conclusion, summary, final thoughts, or implications should be supported by the evidence presented.

The complete review process for manuscripts submitted to this department may take up to three months. The author guidelines provide additional information on what you should know about the submission process.

**Educational Tweets** feature brief informative tidbits, views, and opinions on hot topics, current events/issues, educational policies, interesting readings, and other areas that impact education or inform teaching and learning. The information, views, and opinions tweeted in this department reflect those of the author.

Papers submitted to Educational Tweets are limited to 350 words and are generally solicited by the section editors. Persons interested in submitting a paper should make an inquiry. Include in the subject line "Educational Tweets".

**Online Resources** highlight Internet Websites that provide information on instructional resources for PK-12 classroom and preservice teachers as well as resources that may be of interest to school administrators and teacher education faculty in higher education. Resources featured in this department are generated by the section editors.

**The Event Zone** features educational events such as conferences, meetings, workshops, forums, professional development opportunities, and webinars sponsored by various agencies and organizations that embrace effective teaching and learning. Events featured in this department are generated by the section editors.

<b>Submission Deadlines</b>		
Fall 2011 (October/November)	Spring 2012 (March/April)	Summer 2012 (July/August)
Manuscript Deadline May 15, 2011	Manuscript Deadline November 15, 2011	Manuscript Deadline February 15, 2012

## Author Guidelines

The Interdisciplinary Journal of Teaching and Learning (IJTL) is a scholarly triple-blind peer reviewed open access electronic refereed journal that welcomes manuscripts from scholars, academicians, teachers, researchers, graduate students (whose work is co-authored by faculty), administrators, practitioners, and policymakers on a variety of topics and content areas as well as educational issues, evidence-based practices, and topics of educational significance.

Manuscripts submitted must be an original contribution. A cover letter must accompany the manuscript that provides assurances that the manuscript is an original work that has not been previously published (in whole or substantial part), or is being considered concurrently for publication by another publisher.

Manuscripts must be submitted electronically using word processing software. Acceptable formats include Microsoft Word (doc /docx) and Rich Text format (rtf).

Manuscripts should be formatted for printing on standard 8 x 11 inch paper with 1-inch margins, double spaced (including quotations and references), and prepared in Times New Roman 12-point font size. Titles, headings, and subheadings should be in upper and lower case fonts.

Manuscripts should not exceed 25 pages in length, including the title page, abstract, references, and tables or figures.

A separate cover sheet should provide the authors' full name, organization or institutional affiliation, mailing address, phone number, and e-mail address; and the corresponding author should be identified. The authors' names should not appear on any other pages of the manuscript. It is the responsibility of the corresponding author to notify the corresponding editor of the IJTL of changes in address, organization, or institutional affiliation occurring during the review process.

An abstract (100 - 150 words) should be included that summarizes the content of the manuscript. Five or six key words should be placed below the abstract.

Tables and figures should be placed in a separate file, and need not be double-spaced. Tables should only be used when appropriate and should include only essential data. Figures should be camera ready. Indicate the location for tables and figures in the text in boldface, enclosed in brackets, on a separate line.

The author is responsible for the accuracy and completeness of all references. References should be double-spaced and follow the specifications of the 6th edition of the Publication Manual of the American Psychological Association. The author is also responsible for obtaining permission to use copyrighted material, if required.

Photos or artwork must be camera ready. The acceptable electronic format is jpeg that is at least 300 dpi. Authors should never assume that material downloaded or extracted from the Internet may be used without obtaining permission. It is the responsibility of the author to obtain permission, which should accompany the manuscript submission.



Submit completed manuscripts or inquiries to the editor at [coeijtl@subr.edu](mailto:coeijtl@subr.edu). The IJTL is published by the College of Education under the auspices of the Executive Editor, Vera I. Daniels, Joseph Kermit Haynes-Casino Rouge Endowed Professor, Special Education Programs, Southern University and A & M College, P. O. Box 11298, Baton Rouge, Louisiana 70813. Telephone/Fax (225) 771-5810.

## Review Process

Manuscripts submitted to the IJTL undergo a triple-blind peer review. All identifying information about the author is removed to ensure that the author's identity is not revealed.

Manuscripts received will be screened by the journal editors for conformity to the editorial guidelines, appropriateness of topic, and appropriateness for the journal readership. Manuscripts will also be assessed for content, relevance, accuracy, and usefulness to those in educational settings and stakeholders with an interest in educational policies and issues.

Appropriate manuscripts will be sent to peer reviewers. Poorly written or formatted manuscripts will not be sent out for peer review.

All manuscripts received by the IJTL are assigned an identification number. This number is used to track the manuscript during the review process.

Within two weeks of receipt of the manuscript, an e-mail is sent to the corresponding author acknowledging receipt of the manuscript with notification of the assigned identification number. The corresponding author may contact the journal corresponding editor at any time during the review process to obtain information about the status of their manuscript. Include in the subject line "Request for Manuscript Status Update (Manuscript #\_\_\_)."

The manuscript review process is generally completed within three months. This process may be slightly longer during major academic breaks or holidays.

Peer reviewers make one of the following decisions concerning a manuscript: (a) accept for publication (b) accept for publication and request minor revisions, (c) consider for publication after major revisions with the stipulation for a second peer review, (d) reject with resubmission invited, or (e) reject and decline the opportunity to publish.

Authors of manuscripts that have been accepted for publication will be notified by e-mail through the corresponding author. In some instances, authors may be asked to make revisions and provide a final copy of the manuscript before it is forwarded for publication.

Manuscripts accepted for publication may be susceptible to further editing to improve the quality and readability of the manuscript without materially changing the meaning of the text. Before publication, the corresponding author will receive an edited copy of the manuscript to approve its content and answer any questions that may arise from the editing process.

The IJTL is always looking for peer reviewers to serve on its Board of Reviewers. If you are interested in being considered as a peer reviewer, click on the link [Peer Reviewer](#) to obtain an application. Please return the application by e-mail ([coeijtl@subr.edu](mailto:coeijtl@subr.edu)) or fax (225-771-5810).

# Universal Design for Learning: Assistance for Teachers in Today's Inclusive Classrooms

**Sally A. Spencer**

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Universal design for learning (UDL) is a valuable tool for the proactive planning of engaging, accessible lessons in today's diverse classrooms. UDL focuses on three core principles—representation, expression, and engagement—to help educators develop motivating, accessible instruction that will increase the participation of all learners, including those with special needs. Classroom application of UDL includes the use of technology, multiple modalities of instruction, flexible assessment, and group activities to give students choices and provide them with opportunities to empower themselves as learners. Although there is not yet a conclusive body of quantitative research on student outcomes related to UDL, the literature documents benefits that include reduced behavior problems, increased metacognitive knowledge, and improved access to the curriculum for struggling learners.

**Keywords:** Universal Design, differentiation, special needs, technology, diverse learners, inclusion, English language learners, special education

One of the most frequent concerns of new teachers is “How can I reach my students with special needs?” Although most teachers receive some training in differentiation, many still feel that meeting the diverse needs of students in inclusive classrooms can be challenging (Meyer & Rose, 2000). Typical inclusive classes may have a wide range of learners, including students with learning disabilities, English language learners, children who are gifted and talented, and students with attention problems, autism, or emotional problems. Additionally, every class includes an array of average learners, all of whom need concern and attention.

One solution to addressing the needs of diverse learners lies in the concept of universal design for learning (UDL). UDL was developed by the Center for Applied Special Technology (CAST) as a method of lesson planning that helps teachers create lessons that are effective for the broad range of students in their classrooms (CAST, 2010). UDL involves the proactive application of instructional design concepts, pedagogical knowledge, and instructional technology to create instruction that is accessible and engaging to learners across the spectrum of ability (King-Sears, 2009).

Typically, when teachers try to make content accessible for struggling learners, they accommodate the work after it has been planned. In other words, teachers plan the lesson for the majority of their students, then think about what they need to change to make it accessible for individual students with special learning needs, like Raymond, who can't decode, Missy, who has trouble paying attention, Giovanni, whose English is just emerging, Yolanda, who is gifted, or the other myriad of children who have unique learning requirements. For each of these students,

the teacher might need to create an individualized accommodation that allows the student to fully participate in the activities and understand the content. Although this approach can help students with learning difficulties gain access to the general education curriculum, it requires time and concerted effort after a lesson is developed, and is only the first step toward true accessibility (Edyburn, 2010).

UDL takes another approach to differentiation. UDL is a *proactive* strategy that helps teachers build differentiation into their lesson plans from the beginning, eliminating the need for most of the accommodations teachers typically make after the fact, and providing the flexibility and accessibility needed to reduce the barriers for students with disabilities (CAST, 2010; Edyburn, 2010). It is based on the principle of universal access as is commonly seen in architecture (Burgstahler, 2001). To understand this better, consider the following example. You are walking through a building, arms loaded with personal items, textbooks and your heavy winter coat. You reach the door and find you don't have a free hand to grab the handle. Thankfully, there is a disability access button at the side of the door that you can push with your hip, and you sigh with relief as the door opens electronically. That is an example of universal access. That access button, which was designed to help people in wheelchairs, has also turned out to be invaluable to people with shopping bags, mothers pushing strollers, and people carrying too many personal effects. What was designed for a specific population, people in wheelchairs, has turned out to be helpful to everyone. That is also the principle behind UDL. By proactively designing lessons to make them accessible to students with special needs, teachers end up helping everyone in their class, providing improved access to the curriculum for all.

### **The Core Principles of UDL**

There are three core principles that teachers need to consider when planning with UDL: how to *teach* the content to make it accessible (*representation*), how the students will *show* what they learned (*expression*), and how to *motivate* all the learners to do their best work (*engagement*). To use UDL to its maximum advantage, teachers must learn how to present the content so that it is not just oral or in print (*representation*), but so the content is represented through a variety of modalities and methods such as videos, websites, pictures and realia. Additionally, UDL requires teachers to provide students with a variety of options to communicate what they have learned (*expression*), so that we move beyond traditional tests and papers to include options that allow students to capitalize on their affinities and talents. Finally, teachers need to implement an assortment of classroom strategies that empower their students and draw them into the learning (*engagement*) by providing choices, reducing anxiety, and rewarding effort. Those three concepts—representation, expression and engagement—are the cornerstones of UDL, and are the keys to planning motivating, accessible curriculum for the diversity of learners in inclusive classrooms (CAST, 2010). Additionally, the application of technology is a key underpinning of UDL, compelling teachers to make the acquisition of knowledge more accessible to students through such tools as voice to text software, interactive web programs, and electronic text. The thoughtful and well-designed application of technology is critical to implementation of UDL in the classroom (Edyburn, 2006).

The following scenario illustrates some of the challenges facing teachers as they plan instruction for today's inclusive classrooms. Although this is not a real scenario, it represents the type of

thinking in which a teacher might engage while preparing to teach a class of students with diverse learning needs, and helps highlight the practical application of UDL in the K-12 classroom.

### **Instructional Planning Without UDL**

Imagine a teacher is planning a fifth-grade science lesson about the circulatory system. A typical lesson might engage students in instructional activities such as reading aloud from the science textbook, discussing the content of the chapter, drawing a picture of the circulatory system, and answering the questions at the end of the chapter—a typical (and perhaps predictable) science lesson. Does it meet the needs of the students? Let's take a look at some students that might be found in an inclusive classroom and see if this lesson will satisfy their individual learning requirements.

Most inclusive classrooms contain students who are identified with learning disabilities (LD); in fact, more than 88% of students with LD spend at least 40% of the day in general education classrooms (U.S. Department of Education, 2011). Let's call our student with LD Raymond. Raymond can't decode at grade level and can't follow along easily in the textbook. Although he has strong oral comprehension and is able to understand grade level concepts, he's liable to miss many key points in a textbook-based lesson such as the one described above. Additionally, his writing is poor, so answering the questions in the textbook can be unproductive for him. The lesson described above is unlikely to be successful for Raymond and other students with LD who struggle to read and write proficiently.

Another group of students common to many contemporary classrooms are those identified with Attention Deficit Disorder (ADD). Take the example of Missy. Missy has extreme difficulty staying focused when the class is doing whole class reading. She will often cause a disruption by playing with her pencil loudly or wriggling around in her seat during textbook reading, and there is a high likelihood for behavior problems when she is answering questions in writing—a non-preferred task for Missy. Does this lesson meet the needs of Missy, who has trouble paying attention in class? Most likely this lesson will not engage her, and Missy along with other students like her is very likely to exhibit behavior problems due to lack of engagement in the instructional activities.

Sixty-seven percent of all public schools include at least some English learners (U.S. Department of Education, 2007), and in urban areas they constitute the majority of children in many schools. Let's call this student Giovanni. Giovanni is a hard worker, highly motivated, and never causes any trouble. Unfortunately, his English vocabulary is still pretty basic, so a lot of the science content in the textbook is inaccessible to him. He gives all his assignments his best effort, but his work often shows confusion on the concepts, and English writing is very difficult for him. The lesson outlined above is not the best design for English language learners like Giovanni, who will need more support with English vocabulary and writing in order to be successful.

Finally, approximately six percent of learners nationally are classified as gifted and talented (U.S. Department of Education, 2006), such as Yolanda. Yolanda is a high-functioning student who is bored by repetitive tasks that don't challenge her higher-level thinking. The teacher may be concerned that she's not getting the opportunity to develop her unique gifts to their maximum

potential. In this particular lesson Yolanda will probably do a good job, but she could process this content on a much higher level if given the opportunity. This traditional textbook-based lesson doesn't give a gifted student such as Yolanda the enrichment opportunity she deserves.

### **Instructional Planning with UDL**

As can be seen by the examples above, it can be challenging to meet the needs of the array of students in an inclusive classroom, particularly when using traditional instructional methodology. What can a teacher do to help this diverse group? One solution is to plan the lesson using UDL. First, let's consider the teaching part of the UDL equation—*representation*. The goal of the representation element of UDL is to consider multiple ways to present new information so that everyone can access the concepts, and not just rely on the textbook to be the primary carrier of facts to the students (CAST, 2010). What can be done to represent this material in a way that will make the content more accessible to Missy, Giovanni, Raymond, Yolanda, and all the other learners in a typical inclusive classroom?

**Presenting Information With UDL: Representation.** There are many elements a teacher can consider when presenting information using UDL. A teacher could think about ways to use graphics and videos, ways to engage students in kinesthetic activities, and options for activating background knowledge, linking new learning to old. CAST calls this the “what” of learning—providing students with a variety of opportunities to gather information and organize it to make sense of the new data (CAST, 2010). For example, we know that many students will need some assistance with the vocabulary of a fifth grade science lesson, so the teacher should carefully choose 4 or 5 words to pre-teach that are critical to understanding the main concepts from the text. Judiciously choosing vocabulary is key to pre-teaching because too many words will likely be counterproductive and may overwhelm English learners like Giovanni (Beck, McKeown & Kucan, 2002). It might also be a good idea to use a keyword strategy such as the Lincs strategy from the University of Kansas (Ellis, 1992) in which students use pictures and mnemonic devices to learn and retain new word meanings, or the book *Vocabulary Cartoons* (Burchers, 2007), which makes vocabulary more accessible through engaging pictures and stories that include mnemonic devices and keywords. Figure 1 provides additional information on these and other instructional strategies mentioned in this article. Whatever strategies are employed, the focus should be on providing options for students to understand and retain new vocabulary beyond the conventional activities of copying dictionary definitions and practicing rote memorization.

**Figure 1**  
**Instructional Materials and Technology**

**Comic Life**

A web-based program that supports students in creating, uploading or printing their own comic book pages on topics of their choice. [www.plasq.com/comiclif](http://www.plasq.com/comiclif)

**Dragon Naturally Speaking**

Easy to use speech recognition software for PC or Mac. Is also available as an application for iPhone, iPod Touch and iPad. [www.nuance.com](http://www.nuance.com)

**Figure 1**  
**Instructional Materials and Technology (continued)**

**e –Speaking**

Free voice recognition software available for Windows-based computers. Technology by Microsoft. [www.e-speaking.com](http://www.e-speaking.com)

**Graffiti**

An interactive strategy in which the teacher mounts poster paper around the classroom with a variety of prompts. Students circulate the room with colored markers, drawing or writing their responses to the prompts and to other students' responses. [www.facinghistory.org/resources/strategies/graffiti-boards-reacting-diff](http://www.facinghistory.org/resources/strategies/graffiti-boards-reacting-diff)

**KWL**

A strategy for stimulating prior knowledge on an instructional topic. Students are asked to generate what they already know about a topic (K), and to create questions about what they want to know (W). At the end of the lesson or unit, students go back and generate a list of things they learned (L). [www.readingquest.org/strat/kwl.html](http://www.readingquest.org/strat/kwl.html)

**Kurzweil 3000**

A text-reading system available for Windows or Mac based computers. Includes a variety of tools to support the struggling reader in K-12 classrooms. [www.kurzweiledu.com](http://www.kurzweiledu.com)

**Lincs Strategy**

A visual mnemonic strategy to help students learn and retain complex vocabulary. Developed by researchers at Kansas University Center for Research on Learning. [www.k8accesscenter.org/documents/JKnight.webinar.ppt](http://www.k8accesscenter.org/documents/JKnight.webinar.ppt)

**Vocabulary Cartoons**

A series of books that use cartoons and mnemonic devices to help students learn and retain complex vocabulary. [www.vocabularycartoons.com](http://www.vocabularycartoons.com)

**Visuwords**

An on-line graphical dictionary that helps students visualize links and relationships between vocabulary words. [www.visuwords.com](http://www.visuwords.com)

Another productive way to support the vocabulary acquisition of English learners such as Giovanni during the representation portion of UDL is to highlight the relationships between English vocabulary words and the students' primary language using a word web. For example, the word "circulation" is "circulacion" in Giovanni's primary language, Spanish, and in this case both the orthography and the meaning are similar, a critical element for learners in early stages of English acquisition (Brenders, van Hell, & Dijkstra, 2011). Explicitly demonstrating the relationship between these cognates can help Giovanni and other Spanish speakers retain the

vocabulary and apply the learning to a variety of other new words. Additionally, presenting the information in a visual format through the use of a word web makes it more comprehensible to many learners, and is a foundational principle of UDL (Council for Exceptional Children, 2005). The web-based program Visuwords is one technological tool that uses visual mapping to help students understand the relationships between words with common roots and meanings.

Activating background knowledge is another primary tenet of representation. Many teachers use the “Know, Want to know, Learn” strategy (KWL), in which students generate lists of things they already know about a topic, things they want to know, and finally, things they have learned (Ogle, 2007). However, KWL has been around a long time and can be a bit overused, so instead a teacher might choose to use a more unusual and interactive strategy to activate prior knowledge and interest students in the new topic. Graffiti (Bennett & Rohlheiser, 2001) is a learning strategy that asks students to move around the room while writing down, drawing, or dictating everything they know about a particular topic on large sheets of paper. It is a creative strategy that gets children actively engaged, and after students have generated ideas, they can work in groups to share and clarify their thoughts. Kinesthetic, cooperative activities such as Graffiti are really motivating to students with attention problems like Missy, who typically don’t enjoy textbook based lessons and who crave stimulation and movement. Additionally, students like Raymond who do not write well can choose to represent their ideas through drawings when engaged in a Graffiti activity.

Implementation of UDL also requires the use of technology whenever possible to make content more accessible to students (Edyburn, 2010). Before asking the students to read from a textbook, the teacher might show a short YouTube video about the parts of the circulatory system to catch students’ interest and to present the content in a visual manner. As mentioned above, one of the key precepts of UDL is to provide content in a variety of modalities, and the use of technology such as video can provide an alternative input for students who need it (King-Sears, 2001). Because some children have trouble getting meaningful information out of a video, it can be a good idea to have them watch the video twice. Teachers can have them watch it through once, hold a quick discussion about the content, then go back and have them watch it again in sections. After each section of the video, the class can go into the text and read about that particular topic. For example, when the video shows the chambers of the heart, students can stop and read the corresponding part in the textbook. Using video or Internet technology to provide visual support makes the content come alive for students, and builds comprehension for everyone. Although some teachers might be afraid that they will be spoon-feeding their students by using video in this way, research indicates that poor readers often don’t know how to access visual information stored in their memories (Tovani, 2000). Using video to preview new information can help students learn to associate new content with what they have previously learned in other mediums.

Another effective application of technology for representation is the use of electronic books. By providing access to text on the computer or an e-reader such as an iPad, Nook or Kindle, students can enlarge the print, change the background color, access electronic dictionaries, and even have difficult words read aloud. Raymond, the student with LD, could use a text to speech program such as the Kurzweil 3000, or the text reader built into Mac operating systems, to read web-based or electronic text aloud to him in synthesized speech. For Raymond, access to electronic text can

make the world of print comprehensible and meaningful (Edyburn, 2006). In UDL, teachers provide all students the option of accessing text through technology whenever possible.

As the students are watching the video and reading or listening to the text, the teacher might simultaneously give them the opportunity to interact with the content in yet another modality, by using a graphic organizer to outline the main points in the text. The teacher can ask students to categorize the new information on the graphic organizer as they go through the text and the video, and then model this activity on an Elmo or overhead projector during the lesson, thus providing another means of visual support. Again, this falls under the UDL principle of representation. The Center for Universal Design (1997) recommends building redundancy into the presentation of essential information by representing it in a variety of ways—in this case, using lecture, video, a graphic organizer and electronic text allows students to experience the content multiple times through multiple formats.

**Assessing Learning Through UDL: Expression.** The UDL principal of expression asks teachers to consider a variety of approaches for students to show what they have learned, focusing on providing options that allow them to express their learning through the modality most effective to their learning style. Although some students are able to answer questions in the textbook successfully, many students do this kind of work haphazardly. Since the teacher's goal should be to have students show understanding of the key points identified in the learning objectives, UDL encourages teachers to give students a broad range of alternatives to demonstrate that understanding. For example, students might write a short play, write a poem or limerick, make a poster or painting, make a Power Point presentation, answer the questions in the textbook, give an oral presentation, dictate an essay onto the computer, or dictate answers into a tape recorder. The list could go on and on. Giving students choices of ways to demonstrate what they have learned allows them opportunities to successfully participate in the curriculum, despite their learning challenges (Rose & Meyer, 2002).

By providing choices to students, the teacher is also minimizing attention and writing problems for students such as Missy and Raymond. Instead of struggling with traditional paper and pencil tasks, these students can select an option that will engage them and make the most of their strengths. Missy, who is a kinesthetic learner, might choose to write and perform a play with a partner, while Raymond might decide to dictate his work using computerized voice-recognition software such as Dragon Naturally Speaking, or e-Speaking, a free program for Windows users. The choice of activity doesn't matter—what's important is that the students are developing metacognition by focusing on their own learning assets, and they are experiencing success by using a mode of expression that suits their individual affinities. Furthermore, by incorporating choices into a lesson plan, the teacher has now differentiated for gifted learners, too. Our gifted learner Yolanda, for example, might choose to write long, complicated limericks about topics she is learning, or create a computer-based comic strip using a program such as Comic Life. These options can be integrated into the lesson plan for any student to implement.

**Assessing Student Outcomes in UDL.** In UDL, summative assessment of student learning is closely linked to the principal of expression, and should be flexible according to the instructional objective and individual students needs. Skill (for example, a student's ability to write a paper) should be separated from knowledge (a student's understanding of the concepts in a unit). By



separating these two components, teachers can reduce the effects of writing deficits where they exist, and acquire a truer picture of what a student has actually learned. Like instruction, assessment should be provided in multiple formats so that students can show their understanding of concepts and topics in a style that allows them to respond in the medium that is most effective for them (Hitchcock, Meyer, Rose & Jackson, 2002).

Most of the ideas for expression cited above also can be adapted and used as methods of assessment by providing a rubric of expectations to the students. For instance, in the previous example of the circulatory system, the rubric might specify that students need to illustrate understanding of the functions of the veins and arteries, the chambers of the heart, and the transportation and distribution of oxygen in the system. The students could choose how they show mastery of this content through a variety of activities or technologies. By giving students multiple opportunities to show their learning through a broad selection of authentic formats, students build confidence in their abilities, and become more comfortable with assessment in general (Thousand, Villa & Nevin, 2007).

**Motivating Students Through UDL: Engagement.** The UDL principle of engagement involves addressing the affective network: how students feel about school and the content they are learning. The focus of the engagement principle is to get students interested in the curriculum, to challenge them, and motivate them to learn about the topic at hand (CAST, 2010). One way that UDL recommends motivating learners is by providing them with options about how to participate in the classroom, for example, giving students the choice of working with a partner or small team whenever feasible. In our example lesson, the teacher might give students the choice to work alone, with a partner, or in a small group to complete their final project. Group work is very motivating for many students, and can be used as an informal peer support strategy (Thousand, Villa & Nevin, 2007). It is not unusual for a large percentage of a class to choose working with a partner over individual work at least some of the time, and research tells us that students are developing social and thinking skills as they collaborate (Johnson & Johnson, 1999; Kagan, 2011). The first few times a teacher gives students these options it can be logistically challenging. If it is done consistently, however, soon the students will know the routine and the teacher will have created a community of learners who can make informed choices about how to learn (Rose & Meyer, 2002).

Another important component of engagement is reducing threat for students. Students can feel threatened in the classroom when they are asked to expose their deficits (for example, by reading aloud), are forced to work in an area that is too noisy or too crowded for them, or when required to “work quietly” for long periods of time. Options for decreasing threat include giving students the opportunity to work in a quiet, private space, allowing students to “say no” to reading aloud or answering questions in front of the class, varying the length of work sessions, and giving students the chance to earn short breaks. Providing feedback that rewards effort and not just outcome also reduces threat for struggling learners (CAST, 2010). For example, awarding two grades on assignments—one for student effort and one for correct application of the concepts or skills—can build student motivation and increase engagement. Grading that includes both process and product has been shown to be an effective tool for successful inclusion of students with special needs in general education classrooms (Silva, Munk & Bursuck, 2005), and can have a positive impact on student engagement.

## Benefits of UDL

Since UDL was officially recognized in the reauthorization of IDEA in 2004, it has begun to gain acceptance in classrooms across the country. However, quantitative research confirming its beneficial effects on student outcomes is still in short supply (Edyburn, 2010). One documented benefit of UDL can be a renewed focus on the efficacy of instruction. For example, Meo (2008) found that teachers trained in UDL for high school math instruction began to place less blame on the students for insufficient learning, and instead saw the deficits as related to poor instructional design.

Another aspect of UDL, the use of technology to enhance instruction, has been examined in a number of studies. Boyle et al. (2003) found that audio textbooks were more effective than a regular textbook in helping high school students with high-incidence disabilities learn content. Similarly, Anderson-Inman and Horney (2007) found the use of technology such as e-readers and electronic dictionaries helped build positive outcomes in reading, while Xin and Reith (2001) used video to improve the vocabulary acquisition of elementary students with learning disabilities. Despite evidence of positive outcomes for some elements of UDL, more studies are needed to quantitatively determine the overall effects of UDL on student outcomes (Kennedy & Deshler, 2010).

For teachers contemplating the implementation of UDL, there are a few key benefits to consider:

1. Students' behavior problems will reduce significantly if their learning needs are met (Morrissey, 2009). UDL can meet the learning needs of students and reduce inappropriate behaviors by providing motivating options for representation, expression and engagement.
2. Building a variety of choices into lesson plans gives students the opportunity to play to their strengths and avoids the need for modifying work, while providing students the opportunity to gain metacognitive knowledge (Murawski & Spencer, 2011). By teaching students how to maximize their individual learning strengths, we create independent learners who are more likely to be successful in a variety of settings.
3. When used well, Universal Design for Learning incorporates all these techniques into lessons that are accessible for a variety of struggling learners—and which will help every child in the class become more involved and confident in the classroom (CAST, 2010; Council for Exceptional Children, 2005).

## Final Thoughts

Research suggests that using the principles of UDL to design instruction can help teachers not only make their lessons more accessible to learners with special needs, but make them more interesting for all their students. UDL challenges us to broaden our thinking about instruction so that we move beyond traditional “read, lecture, worksheet” teaching into instruction that uses technology and flexible methodologies to create curriculum that is more appealing to all types of learners. If it were possible to condense the principle of UDL into a simple definition, it might be *“Proactively planning engaging lessons that use a variety of modalities and techniques to present*

information, and which give students options for how and with whom they complete their work". Yes, this is a great simplification, but the critical elements are there: *representation* of information in a variety of formats, *engagement* of learners, and means of *expression* that allow students flexibility and individualization. For more information on UDL and its application in the classroom, see the resources included in Figure 2.

## **Figure 2** **Resources on UDL**

### **Books**

Council for Exceptional Children (2005). *Universal design for learning: A guide for teachers and educational professionals*. Upper Saddle River, NJ: Merrill.

Murawski, W.W., & Spencer, S. (2011). *Collaborate, communicate & differentiate! How to increase student learning in today's diverse schools*. Thousand Oaks, CA: Corwin Press.

Rose, D. H., & Meyer, A. (Ed.) (2006). *A practical reader in universal design for learning*. Cambridge, MA: Harvard Education Press.

Rose, D. H., & Meyer, A. (2002). *Teaching every student in the digital age: Universal design for learning*. Alexandria, VA: ACSD. Also available on line at: <http://www.cast.org/teachingeverystudent/ideas/tes/>

Thousand, J. S., Villa, R. A., & Nevin, A. I. (2007). *Differentiating instruction: Collaboratively planning and teaching for universally designed learning*. Thousand Oaks, CA: Corwin Press.

### **Websites**

*AccessIT: National Center on Accessible Information Technology in Education:* <http://www.washington.edu/accessit/index.html>

*Center for Applied Special Technology (CAST):* <http://www.cast.org/teachingeverystudent>

*National Center to Improve Practice: Technology in Early Childhood Special Education:* <http://www2.edc.org/NCIP/library/ec/toc.htm>

*National Center for Universal Design for Learning:* <http://www.udlcenter.org>

*U.S. Office of Special Education Programs, Toolkit on UDL:* <http://www.osepideasthatwork.org/UDL/index.asp>

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# Independence and Interdependence: An Analysis of Pre-Service Candidates' Use of Focused Assignments on an Electronic Discussion Forum During the Initial Field Experience

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This article describes a case study using an electronic learning platform for creating an interactive learning community through asynchronous discussion to enhance the initial field experience of secondary math and English teacher candidates enrolled in Field Experience. We identified three problems with the field experience course—lack of structure, isolation of the candidates in the field, and passivity of the candidates. To address these problems, we established three goals—to create a way for candidates to structure their reflections in the field, to create a learning community of pre-professionals, and to foster independence and assertiveness in our candidates. With these goals in mind, focused assignments were developed and implemented in an interactive online discussion forum. The results of this study have two important implications for teacher preparation. First, the results suggest that with focused assignments and guidelines for peer interaction, on-line peer discussions can be a powerful tool in helping candidates to reflect on student learning and the student perspective in the classroom with virtually no University-Based Teacher Educator intervention. Secondly, the study reveals that the use of technology with focused assignments can be helpful in creating more assertive, independent candidates who are better able to think about and negotiate the school environments in which they plan careers.

**Keywords:** field experience, learning communities, isolation, candidates, peer support, eSupervision, reflection, technology

As technology becomes more ubiquitous in our society, colleges of education are exploring how to “leverage” technology to be “a highly effective tool” in our educational toolkit as we prepare tomorrow’s teachers (Swenson & Redmond, 2009, p. 6, 9). Advances in computer technology, including electronic learning platforms (Meyers, 2006; Nicholson & Bond, 2003), video annotation tools (Rich & Hannafin, 2009), video-enhanced observations (Sewall, 2009), video case studies (Sherin & van Es, 2005), digital exhibitions (Hatch & Grossman, 2009), eSupervision (Alger & Kopcha, 2009), online mentoring (Knapczyk, Hew, Frey, & Wall-Marencik, 2005), and blogs (Stiler & Philleo, 2003; Wassell & Crouch, 2008) are being implemented at institutions of higher learning and have created “opportunities for improved delivery of instruction” as teacher education programs work to make “productive use of the improved technology available” to increase “the educative value of experience in the classroom” (Nicholson & Bond, 2003, p. 756). This case study describes just such an attempt in which Blackboard, particularly focused assignments in the Discussion Forum, was used to create an interactive learning community

through asynchronous discussion to enhance the initial field experience of secondary math and English candidates.<sup>1</sup>

## Background

Field experiences have long been valued as essential for the preparation of teachers, but empirical data on the effects of different types of field experiences has been sparse and inconclusive (Shanahan, 2008). A recent report of the Blue Ribbon Panel on Clinical Preparation and Partnerships for Improved Student Learning conceded that there is “not a large research base on what makes clinical preparation effective” (NCATE, 2010, p. iv). Researchers recognized that learning within field experiences is “highly contextualized and uneven” (Capraro, Capraro, & Helfeldt, 2010, p. 132). For example, Capraro, Capraro, and Helfeldt (2010) compared three different types of field experiences to measure the effect of differentiated field experiences on the perceived level of confidence of teacher candidates. They found no statistically significant difference in perceived teacher competencies and further determined that the amount of time spent in the field was not as important as other factors such as the selection, development, and partnerships with clinical faculty and districts.

However, existing research does suggest the importance of guidance and structure to the field experience. Posner (2005) cautions against candidates simply doing a “field experience without thinking deeply about it, [allowing their] experiences to wash over [them] without savoring and examining them for their significance” (p. 21). Whipp (2003) and Dawson (2006) stress that teacher candidates “need considerable guidance and support to think critically about their experiences” (Whipp, p. 321).

Additionally, research points to the importance of having a connection between course activities and the field experience. When the practicum is aligned with theoretical and evidence-based teaching procedures studied in a course, the result is more “in depth learning” (Frey, 2008, p. 199; see also Allsopp, DeMarie, Alvarez-McHatton, & Doone, 2006; Slavkin, 2002; Zeichner, 2010). Candidates in practica need structured experiences in the field where they are able to make connections with and apply educational course content (Allsopp et al., 2006).

As part of our ongoing program evaluation and revision, we recognized that our field experience course was not satisfying the criteria above nor was it meeting candidates’ needs. We identified three problems with this course. First, we noticed the lack of structure. Second, we observed the isolation of candidates in the field. Thirdly, we identified an issue with the passivity of candidates, which we considered largely a consequence of the first two problems.

In the secondary English and math programs at our University, candidates take their first sustained field experience course in the second phase of their education coursework. Candidates are required to visit and observe in a school environment one full day a week for fifteen weeks. Each candidate is assigned a Mentor Teacher to observe and a University-Based Teacher Educator<sup>2</sup> who oversees the placements and makes two short field visits.

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<sup>1</sup> More recently, candidates in the small health science program have joined the group for Field Experience.

<sup>2</sup> Here and elsewhere, the term Mentor Teacher is used to refer to the Cooperating Teacher; University-Based Teacher Educator is used to refer to the University Supervisor. This language helps to foster an idea of partnership and to eliminate some of the hierarchical bias of the more traditional terms.



First, we recognized the weak structure of the field experience course (no classroom meetings and only two brief field visits by the University-Based Teacher Educator), which allowed little room for the University-Based Teacher Educator to guide candidates about goals and expectations. An additional challenge was its placement in the program. The field experience course was a stand-alone course. It was not linked with any other education coursework and candidates entered the fieldwork without any previous, and in some cases, without any concurrent methods coursework. Second, and partly as a result of the above, candidates taking the field experience course felt isolated. They were often placed alone (without other candidates) with little opportunity to share and articulate their observations and opinions with other candidates or the University-Based Teacher Educator. As a result, they were struggling to make meaning out of their time in the schools. Third, the candidates needed to become more responsible for their own learning, avoiding the passivity observed by both University-Based Teacher Educators and Mentor Teachers. We hoped more assertive, independent candidates would take ownership over their education and the professional opportunities presented by their field experience. The difficulty was reshaping the field experience course to make it meaningful for candidates without substantially increasing the workload for the University-Based Teacher Educator or the candidate, given the unalterable configuration of credits.<sup>3</sup> Sewall (2009) notes similar “constraints on time, resources, and even energy” in her discussion of the challenges of fieldwork and supervision (p. 12).

To provide a structure to the overall field experience, we designed focused assignments and gave candidates concrete goals for their observations so their time in the field was no longer amorphous. Responses to these assignments were to be posted to a Discussion Forum, and peer responses to candidate postings were required. Our thinking was that these assignments would create an online collaborative learning community that would provide maximum interaction among candidates without substantially increasing the workload for the University-Based Teacher Educator. Because research shows there are drawbacks to open-ended and unstructured online discussions and points out the benefits of specific categories for discussion and clear expectations for participation, we designed our assignments and peer responses to meet that recommendation (Aune, 2002; Nonis, Bronack, & Heaton, 2000; Romano & Schwartz, 2005). We also hoped the online community would alleviate the isolation of field work (Edens, 2000; Frey, 2008). As Dutt-Doner and Powers (2000) note, an electronic forum can be “a way of sharing feelings ... relief[ing] stress and support[ing] each other” as well as a “safe place to share their honest feelings” (p. 160). In particular, Nicholson and Bond (2003) found that the discussion board could function as “a place for professional support and community [where] preservice teachers’ reflective thinking develop[s] over time” (p. 259). Through the support of a cohort, we had expectations that the candidates would become more independent—negotiating with their Mentor Teachers, asserting and inserting themselves into the work of the classroom, and finding opportunities to enhance the learning experience themselves. Indeed, Mason (2000) argues that the “inherent nature of CMC [computer mediated communication] motivates individuals to take more responsibility for their learning” (p. 8). We hoped the electronic medium would not only alleviate the passivity of candidates but also make explicit our expectations that candidates show initiative and write about their experience as part of several assignments.

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<sup>3</sup> The University-Based Teacher Educator is given .25 credits per candidate, out of a regular 12 credit per semester credit load. For candidates, Field Experience is one credit out of a typical class load of 12-18 credits.

Because most candidates began their field experience without methods coursework, we designed our assignments to focus largely on observation rather than teaching. We wanted candidates to develop their abilities to reflect on the student perspective and begin to think about how student learning can be affected by the classroom, school, or administrative environment; classroom pedagogy; student culture(s); and student background(s). We hoped this practice of focusing on the student perspective in the classroom would help candidates keep the student perspective in mind when they began to teach and reframe the many different classroom challenges they face.

### **The Assignments**

Candidates were asked to complete several assignments over the course of the semester. Each assignment was written with a specific purpose in mind—to enhance the initial field experience of secondary math and English teacher candidates.

***Describe Your Day** – Briefly (one paragraph) describe a typical day in your practicum visits. What do you do? What have you been able to observe?*

***Teaching Opportunities and Observing Other Teachers – Part 1:** Briefly describe any opportunities you may have had to assist in teaching, whether one on one, small group, or whole class instruction. Also discuss the ways in which you have tried (successfully or not) to insert yourself into the instructional work of the classroom.*

As mentioned above, we were less interested in candidates gaining classroom-teaching experience than we were in their gaining experience being assertive in seeking ways to include themselves in the work of the classroom. In particular, we wanted candidates to practice the important skill of negotiating with the Mentor Teacher over their role in the classroom.<sup>4</sup> Our goal with this assignment was for the candidates to negotiate a role for themselves in the classroom that allowed them to engage in substantive ways with the students such as designing and teaching an entire lesson of their own, teaching a lesson prepared by the Mentor Teacher, working with groups, assisting students one-on-one, or tutoring after school or at lunch.

***Part 2:** Discuss your observation of a teacher other than your Mentor Teacher. Describe how you came to have the opportunity to observe this teacher (your own initiative, Mentor Teacher's suggestion, substitute, etc.). Explain the subject, level, and grade of the class you observed. Reflect on the differences between this teacher and your Mentor Teacher.*

Our goals with this assignment were twofold. Since every teacher has his/her own style, observing other teachers allowed candidates to better understand what they saw happening in their Mentor Teacher's classroom and where their Mentor Teachers fit within the larger culture of the school. In addition, this assignment required candidates to show initiative in seeking opportunities to observe teachers other than their Mentor Teachers. Candidates were encouraged to seek permission to use preparation periods to observe as many different types of classes in their subject

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<sup>4</sup> Candidates regularly struggled with negotiations with Mentor Teachers during Internship (student teaching) experiences. Therefore some assignments for Field Experience provided an important formative experience in developing this skill.

areas as possible and as many different teachers as possible, even teachers outside their subject area.

**Co-Teaching Observation** – *For this assignment, you will be observing a class co-taught by a general education (GE) teacher and special education (SE) teacher. Before you begin, please read Co-Teaching (Cramer, 2010) and review Stages of Co-Teaching & the Co-Teaching Observation Rubric (Gately & Gately, 2001). When you are ready to complete the co-teaching observation rubric, give a rating in each category, using the descriptions in the Co-Teaching Observation Rubric. In addition, write a short narrative in which you describe the class you observed and discuss the behavior you saw that led you to give the ratings that you did in each performance category. Indicate in the narrative which co-teaching approach you think best describes the class you observed.*

The goal of the “Co-Teaching Observation” assignment was to allow candidates to identify and think about the kinds of collaborative teaching they were observing in their field experience. Because the math and English programs offered little coursework to prepare candidates to understand the dynamics of co-teaching and collaboration, we gave them a brief reading assignment on co-teaching written by Cramer (2010). The second reading, Gately and Gately (2001) and its accompanying rubric, offered candidates specific criteria on which to focus (i.e., what to look for) including the physical arrangement of the classroom, balance of instructional presentation, etc. In addition, as with our other assignments, the “Co-Teaching Observation” required some assertiveness on the part of candidates in seeking a co-teaching classroom to visit, if their Mentor Teacher was not involved in a co-teaching scenario.

**Reflective Journal** (completed twice) – *Observe and reflect about what you see happening in the classroom. I am particularly interested in your observations and reflections about the reasons students both are and are not succeeding academically. What reactions, attitudes, and feelings do you observe in the students towards the teacher, the classwork, the atmosphere and structure of the school? Are the students’ reactions amplified or modified by the teaching strategy, classroom and/or school environment, material, or teaching style? In order to begin to think reflectively about these questions, you will need to observe and listen carefully and reflect, in writing, on what you see and hear. Consider addressing the following overlapping subject areas:*

1. *Classroom environment – distractions, physical layout and seating arrangements, facilities and materials of classroom, overall appearance of classroom*
2. *School environment – distractions, physical layout, condition, and appearance, general atmosphere*
3. *Administrative environment – presence and actions of non-teaching personnel, sense or lack of community*

4. *Classroom pedagogy – time management and pacing, clarity of directions, teacher’s attitude toward students, teacher’s attitude toward subject, teacher’s attitude toward the learning and achievement of all students*
5. *Student culture – general student expectations about learning and achievement, use of uniforms, student preparedness for class, student attitudes about the teacher, the class, the subject, school, learning, and achievement*
6. *Student background – consider the special concerns and/or needs of English language learners or immigrant students*

*Write a journal entry (1-2 pages) in which you think through and write critically about the relationship between the elements of the school environment on the one hand and the student learning on the other. Be sure to be specific and concrete in describing what you are seeing. Be careful to combine your description and summary of what you have seen with your own conclusions about student learning.*

This more substantive reflection required the candidates to think through and write critically about the relationship between the elements of the school and student learning. The “Reflective Journal” assignment provided us with the opportunity to assess how well the candidates were learning to “visualize” the classroom from the student perspective.

**Peer Responses** – Ten times over the course of the semester (or five times per half semester), candidates were expected to “respond” via Blackboard to their peers’ work. Candidates were given some latitude over these responses, although they needed to include at least four responses (or two per half semester) to the more lengthy reflective journals.

### **Quantitative Outcomes**

One interesting result was candidates’ high level of participation in terms of time and contribution to the on-line discussions. There were two types of participation measured—reading and posting. If each candidate read the minimum number of postings by their peers, we expected 160 readings to take place (16 candidates with 10 required responses each). Surprisingly, the 16 candidates read a total of 5,096 postings by their peers, which was more than 30 times what we expected. The number of postings expected for each candidate was 16 (6 reflections of their own and 10 responses to their peers). All candidates except one had at least 16 postings.<sup>5</sup> For the 16 candidates, a total of 256 postings were expected. At the end of the semester, the actual number of postings was 361. Table 1 displays the results of candidates’ Blackboard discussion participation.

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<sup>5</sup> That candidate had only 2 postings.

**Table 1**  
**Blackboard Discussion Participation by Candidates\***

Type of Participation	Minimum Number Expected	Actual Number
Peer Postings Read	160	5,096
Postings (Reflecting or Responding)	256	361

\*N = 16

When looking at the amount of time involved in preparing assignments, 16 candidates invested about 165 hours during the semester for this one-credit course. Because candidates were encouraged to compose their work off-line where they could take their time and edit the material, it is likely that the total time invested was greater than 165 hours. The maximum amount of time logged on to the course website by a candidate over the semester was 19 hours and 38 minutes; the minimum was 1 hour and 12 minutes. Fifteen of the sixteen candidates spent 7 hours or more, which is equivalent to about 30 minutes per week, to complete their field experience assignments. Table 2 shows the distribution of total on-line time by candidates, as well as a weekly equivalence of that time.

**Table 2**  
**Total Time On-line Candidates**

Total Time	Number of Candidates (N=16)	Approximate Weekly Equivalence
15 hours or more	3	1 hour/week or more
11 hours or more but less than 15 hours	2	45 min/week – 1 hour/week
7 hours or more but less than 11 hours	10	30 min/week – 45 min/week
Less than 7 hours	1	Less than 30 min/week

The correlation (correlation coefficient = 0.77) between the number of hours a candidate spent on-line and the number of messages posted was significant ( $p < 0.001$ ).<sup>6</sup> The significant positive relationship suggests that the time spent on-line was spent productively, making observations of their own and replying to peers' responses.

In an effort to ascertain whether the focused assignments were of value in enhancing candidates' student perspectives, their journals were assessed based on the candidates' attention to the student perspective as one criterion. Nine of 14 candidates exceeded expectations with regard to this criterion in both journals. Five candidates were less successful. Table 3 presents a comparison of

<sup>6</sup> We removed one outlier, a candidate who had posted more than 3 times the number of expected postings.

the two groups with respect to average time on-line, average number of posts, and average number of readings. There was little difference between the groups in both amount of time spent on-line and number of postings. However, there was a great difference between the groups in the number of postings read. The nine candidates who demonstrated they could consider the student perspective averaged 368 readings per candidate, whereas the five candidates who were less successful at considering the student perspective averaged 279 readings per candidate. This difference is not statistically significant due to the small sample sizes and the large variability, but it appears to indicate that it is not the amount of time spent on-line that affected candidates' perceptions but rather the quality of the time. Candidates who read more about their peers' observations and reflections were able to make gains in identifying and considering the student perspective.

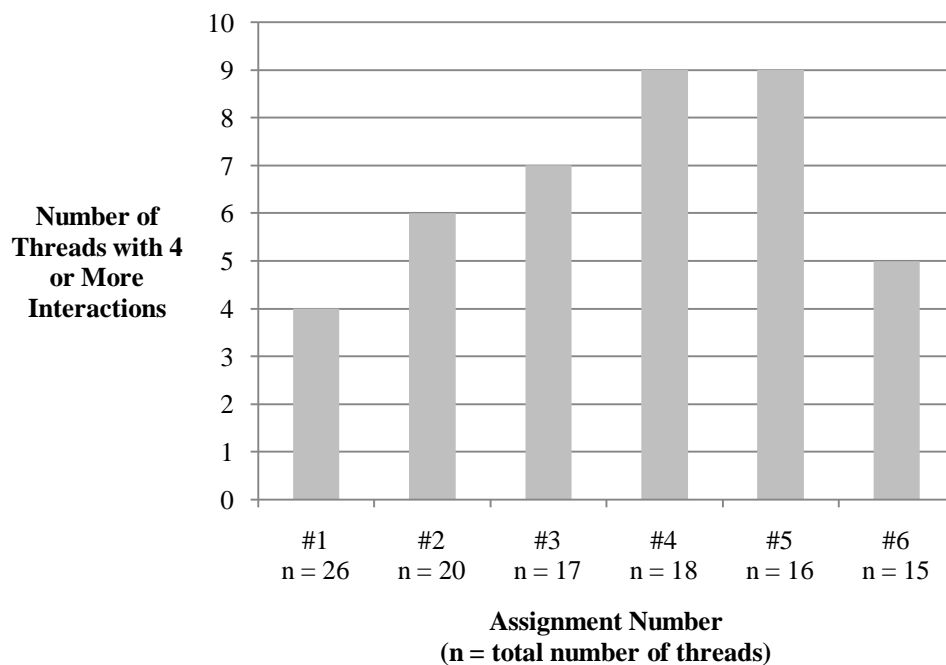
**Table 3**  
**Comparison of Candidates Who Did and Did Not Excel at Attaining the Student Perspective**

	Average Number of Hours On-line	Average Number of Posts	Average Number of Readings
Group Who Excelled at Attaining Student Perspective (n = 9)	11.6 hours	25.2	368
Group Who Did Not Excel at Attaining Student Perspective (n = 5)	11.9 hours	22.2	279

Since one of our goals was to minimize the isolation that candidates experienced and use the Blackboard platform to create a supportive learning community, we also wanted to investigate the value of the discussion forum in encouraging interaction among the candidates. Since the discussion forum allowed the creation of "threads," it was possible to track the length of conversations. Threads were as short as one posting (a candidate posted; no one responded) to as many as 9 interactions. Although we considered threads with four or more interactions to be true conversations, it is possible to find merit in threads with fewer interactions. As shown in Figure 1, the number of threads with four or more interactions increased over the course of the semester as the candidates reached out to receive and gain support from each other.<sup>7</sup> The fourth and fifth assignments show the greatest number of threads with four or more interactions (9 out of 18 threads and 9 out of 16 threads, respectively). Clearly, peer interactions gained momentum over the semester as candidates sought and received support from their peers. Individual stories of that interdependence and support can be seen in the case studies that follow.

<sup>7</sup> The values of n vary because some candidates initiated more than one thread, beginning a new discussion. There were sixteen candidates with one candidate (due to illness) posting assignments 3 through 6 after the end of the semester.

**Figure 1**  
**Discussion Activity as the Semester Progressed Through the Six Focused Assignments**



Thus, extensive candidate participation and the correlation between candidate participation and candidate success suggest that the electronic platform far surpassed our expectations in functioning as a cyber community for our candidates.

### **Qualitative Outcomes**

#### **Gaining the Student Perspective**

The qualitative experiences of candidates' interactions on the Discussion Forum are also indicative of the power of using an electronic platform and focused assignments. As one candidate commented (in the course evaluation), the discussion assignments helped her "look at teaching from a student's perspective as well as a teacher's perspective."

One series of interactions on the Discussion Forum makes clear the importance of focused assignments and the candidate's interaction in developing this student-centered perspective. The initial posting comes from Tara. She wrote about a disaffected student whom she watched sneaking out of gym and whose behavior she initially found "a bit scary." Tara wrote:

I learned yesterday about an immigrant student who came here from Saudi Arabia. He is suppose[d] to be a Senior, but [he] talks like broken English. He will barely change for gym. Yesterday was the first time I really recognized him and what he does.... Mrs. N., Mr. P., and I were on the track and saw this student standing behind a garbage disposal first like sneaking, which was a bit scary.... Mrs. N. said she talked to this student, I

think his name is Nagrim, he came to the United States because his father wanted him to have a better life here.<sup>8</sup>

Tara found Nagrim's behavior disruptive and disturbing, and she located herself within a circle of teachers trying to control him. A second candidate, Elisa, in a peer response, helped Tara reframe her understanding of Nagrim by focusing on his perspective and the possible reasons for his behavior. Elisa wrote:

As for Nagrim, he has to be in a very hard spot. If it is hard for an American student to change schools (in the same country) especially during high school years imagine this poor kid who had to move to a different country! He must be very angry inside and it's logical that at his age he might not completely understand what a better life in America means.

Elisa's insightful commentary allowed Tara to modify her initial assessment of Nagrim's behavior as "scary" and reformulate her judgment with an understanding of Nagrim's "hard position" in America. She responded back to Elisa:

Yes, Nagrim is in a hard position right now coming into a new school and country. I think he seems depressed and upset because it is hard to make friends with new students, especially if some students are rude to him. I think it will take time for him to understand the life in America from where he use[d] to live. I hope he makes friends and feels comfortable soon.

This exchange allowed Tara to rethink and reframe what might have been a dismissive observation of a vulnerable and challenging student. Her preliminary analysis was transformed through candidate-to-candidate interaction via the Discussion Forum, into a more nuanced, reflective student-centered observation.

### **Building on their Peers' Experiences**

Another thread on the Discussion Forum demonstrates how candidates were able to learn from and build on each other's experiences. In the initial posting, Elisa recounted her experience with a student placed into a general education mathematics class when he should have been placed into a bilingual mathematics class:

I came in contact with a little boy (7th grade)... From the start the teacher pointed out to me that he needed help because his skills were very poor. At this time I'll add that the class was working on word problems. 40 minutes through I find that even with my explanations and one-on-one help the student isn't understanding even the simplest word problems... I hesitated to ask the student if he spoke Spanish or English better at first but felt I was left with few options and I wanted to help. The student immediately opened his eyes and told me Spanish. I translated a few of the problems and he got it! He worked the problems faster than some of the other English speaking students. I was glad, in a small way, I made a difference!

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<sup>8</sup> This student's name was changed to preserve his anonymity.



After class I spoke with my Mentor Teacher and he was very thankful. It was only the 5th day of class and he knew something was wrong but didn't know what. He himself couldn't understand how the student was placed in that classroom.

What is remarkable about this posting is not just Elisa's resourcefulness in relation to the student and his language difficulties but also her generosity towards the Mentor Teacher. Rather than blaming the Mentor Teacher, Elisa reframes the incident as being indicative of the immense challenges teachers face: "One day we will be in the front of the classroom and not see what is happening, there will be two dozen children and things may go unseen especially as first, second, even third year teachers. There's much to learn." Her reflective attitude towards both the student and the Mentor Teacher are impressive.

Because of the Discussion Forum, other candidates benefitted from Elisa's insights. Jennifer, having read Elisa's account, was able to apply the insight to an experience of her own.

I actually had a very similar situation. One of the girls in the 7th grade math class I am in is doing extremely badly and my teacher had me work with her today. I explained the assignment to her various times and I remember having read this the day before so I asked her if she would rather speak Spanish and she said yes. After that she began to understand the problems a lot better, she still has some issues but she got better and began participating in the classroom a lot more and my Mentor Teacher congratulated her and the look on her face was just proud and I could tell that she was feeling a lot better about herself.

In part because of what she learned from Elisa, Jennifer was able to "see" this student's issue and intervene successfully to help her. The learning comes full circle when a third candidate, Ahmead, extrapolated from his peers' experiences and offered a larger commentary on the issues. Ahmead wrote:

When working in urban communities problems like this are always faced. Usually students like the boy you helped would have been labeled as just a failure [who] didn't care about work. With you helping [bridge] the language barrier, the student is more responsive and hopefully will now receive the help that's needed.

Without having witnessed this experience in his own observation, Ahmead was able to participate in the broader discussion of addressing the needs of students with language barriers. Through their interaction on the Discussion Forum, and without any intervention on the part of their University-Based Teacher Educator, the candidates were able to make sense out of and intervene positively in the lives of the students they encountered.

### **Independence and Taking Initiative**

The Discussion Forum was also instrumental in allowing candidates to think through and support each other as they worked to take initiative for their own learning experiences to meet the requirements for various assignments. Notice, in the commentary below, how Gina framed her teaching opportunity in terms of her successful initiative:

I had my first teaching opportunity. I successfully inserted myself into the instructional work of the class by asking my Mentor Teacher, Mrs. S., if I could assist the students on a one-on-one basis as students practiced writing and constructing a five paragraph essay.... I listened to the teacher's instructions and pre-read her plan book to be able to assist the students.

Both Gina's success in the classroom and her initiative did not go unnoticed by her peers.

Nii: Gina, I liked the way you showed initiative by asking Mrs. S. to help the students one-on-one. I think it was a good idea to look at Mrs. S.'s lesson plans because you were able to remain consistent with what she was teaching.

Notice how both Gina and Nii framed Gina's success in participating in the work of the classroom with an emphasis on her initiative in negotiating with her Mentor Teacher. In this sense, they reinforced each other, and for the others who read their postings, the importance of this successful show of initiative.

Other candidates were not as successful at obtaining teaching opportunities for themselves. Realizing that assisting students was going to be a challenge for her, Megan L. was able to show initiative by seeking opportunities to observe other teachers:

I haven't had many opportunities to assist students one on one or even in small groups because of the teaching styles of my Mentor Teacher.... [A]lthough I do help my Mentor Teacher with whatever she asks of me, I have not seen much I can assist with in her classroom yet. On the other hand, because of this, I have been able to get some very good observations of my Mentor Teacher and her students. I move around the classroom or sit in different spots around the room and observe how the students react to her lessons.

I also made the initiative to go meet a fellow University student who is currently doing her Student Teaching at [the school]. I walked over and introduced myself to her and her Mentor Teacher, who were both extremely sweet and helpful. They invited me in with open arms, explaining that I can walk in whenever I liked. I visit their classroom every third period because my Mentor Teacher has a prep period and that is also a period where the Student Teacher is conducting the classroom. I usually stay for the fourth period, where her Mentor Teacher takes over, because I like to see the differences in their way of teaching.

Notice here that Megan L. was unable to negotiate a teaching role for herself in her Mentor Teacher's classroom, despite her willingness to "help her Mentor Teacher with whatever she asks of me." Instead of passively accepting this situation, Megan L. did two things to reframe the situation. First, she focused on how she could, simply through moving her seat, improve her ability to learn through observation and get the most out of that experience. Second, she used her initiative, again, like Gina, by explicitly identifying and framing her actions as such, to observe another classroom, using her ties to the Student Teacher to help her negotiate this opportunity.

Rather than bemoaning the fact that her fate was in the hands of an unsupportive Mentor Teacher, Megan L. found different ways to interact with the students and to demonstrate her negotiating skills.

### **Support and Interdependence**

On the Discussion Forum, candidates also were able to commiserate with each other and receive support and encouragement for what might be a frustrating or disheartening experience. One candidate wrote of her inability to be “more active in the classroom” because her Mentor Teacher “lectures most of the class time.” Her peers encouraged her and made specific and constructive suggestions about how she might interject herself into the classroom, while empathizing with her situation, creating the kind of supportive community we had hoped for.

Nancy: When you feel you are ready to teach, maybe you can ask the teacher if you could teach one section, a short lesson.... Good luck when you do teach and just remember to pace yourself, that was one thing I had trouble with.

Jennifer: At least you are able to help the students while they are completing their class work. Up until last week I felt completely uncomfortable with the idea of teaching a lesson but this week I got to talk to some of the students and got to know them a little bit more and that honestly has eased my discomfort a lot. I don't think you are ever going to feel 100% ready until you try, I know I won't. Try talking to your teacher maybe to co-teach a lesson at first until you feel more comfortable. My Mentor Teacher brought this up to me and I think it would help me a lot so maybe it will work for you.

Gina: Hi Megan, I, unfortunately, do not have that option with my Mentor Teacher because she also does much of the lecturing. After every lecture, she allowed me to walk around and help individual students structure their paragraphs accordingly. Therefore, I was interested if you were able to teach this month? If you got the opportunity, how did you feel? How did the students react to you and to your lesson that day?

Megan S.: Gina, I actually did not teach yet. I am not quite ready. I am going to discuss with her this week if I can teach a lesson to one class the following week. I basically sit in the back of the classroom and when she assigns classwork, I walk around and try to help the students. Hopefully by the end of the month I will be able to teach a lesson or two.

By the end of the semester, Megan S. still had not achieved the ideal relationship with her Mentor Teacher but was, nonetheless, able to develop rapport with students in the class.

Megan S.: I did feel in the beginning apprehensive about helping the students because my Mentor Teacher did not seem to like the idea. But now, I am much more involved with the classes. I do feel a little bit of tension at times because the students will walk over to me and ask questions and the teacher orders them to sit back down. So I then feel as if I cannot help them.

While Megan S. was unable to resolve the issues she had with her Mentor Teacher, she was able to use the Discussion Forum to place that relationship in context and to understand from her peers that she was not alone in trying to solve these issues.

### **Reframing Negative Models**

The “Co-Teaching” assignment is perhaps the best evidence of the success of the Blackboard platform. We came to this conclusion because we perceived the candidates as being least prepared by their previous coursework to tackle this assignment, and we had some trepidation about the candidates’ ability to read and process the material on their own and apply it to the classrooms they were observing. However, one thread shows how well the candidates engaged the material. Nii wrote of his opportunity to observe an inclusion teacher working with two different content area teachers:

I was able to observe Mrs. S., a special education teacher working with two different teachers who taught English. The first class was with Mr. Sh. It was apparent that Mrs. S. and Mr. Sh. were in the collaborating stage of co-teaching according to Gately’s teaching rubric. They cracked a few jokes while Mrs. S. introduced me to Mr. Sh. which demonstrated that they had a working relationship. Right away Mr. Sh. stated that they team taught. He explained that in regular teaching situation, they take turns teaching. For example, Mr. Sh. may do the opening and Mrs. S. may do the closing, alternating instruction. I could tell that Mrs. S. was a major part of the classroom by the way the students responded to her when she walked around making sure they were on task. The students were not afraid to ask Mrs. S. for help... After this period was over, Mrs. S. and I went to her next English class taught by Mrs. P. This class was a stark contrast to Mr. Sh.’s class. This was definitely in the beginning stage of co-teaching. Earlier, Mrs. S. mentioned that she played a more laid back role in Mrs. P.’s class. Through my observation, I saw that Mrs. S.’s role was reduced to an aid. The communication between Mrs. P.’s class was minimal. Mrs. S. just mentioned to Mrs. P. that I was there to observe an inclusion class. That was the extent of the communication between the two of them. Mrs. S. and I went straight to the back of the class. Mrs. P. did all of the instruction. She basically talked the whole class. When Mrs. P. tried to engage the students in the lesson only a few students answered while Mrs. S. stood by a student that I presumed may have been an inclusion, judging by his outburst and his behavior. It was as if Mrs. S. stood guard in order to keep his behavior in check while Mrs. P. taught the class.

With Mrs. S., I got to see her in two different situations: one where she was part of a team and another where her role was reduced to an aid. I definitely saw the difference between the two.

Because he watched the inclusion teacher interact with two different content area teachers, this candidate was in a unique position to think about the potential and pitfalls of teacher collaboration. His comments were specific and nuanced, and he drew attention not just to the quality of the interactions the inclusion teacher had with the two different content area teachers but also with the quality of her interactions with the different groups of students. His detailed

observations allowed him to draw subtle conclusions about the student learning that took place in both classrooms, based on the inclusion teacher's role as either full collaborator or aid.

Few candidates had as thought-provoking experiences as Nii, but the Discussion Forum, once again, allowed others to build on what Nii witnessed and described. His peers' remarks demonstrate how they were able to integrate his experience with their own. Elisa, for example, had not witnessed a strong collaborative approach. She wrote:

I like the team taught approach. As for the teachers you were with, I think it says a lot about them and how they still care. Being a "team" takes a lot of work, planning, and commitment to students and each other. The classroom I observe weekly is much like Mrs. P.'s class. The inclusion teacher sticks to his kids and basically controls their behaviors for my Mentor Teacher to teach. It's great that you were able to observe both situations. It will help you draw conclusions as to why co-teaching may or may not work and how you (as a teacher) can do things.

Similarly, Nancy drew conclusions based on Nii's experience:

That sounds like a great classroom to be in. This should be the way all inclusion classes work. The teachers and students should have no problems working together and they all should be treated equally as it seems to be in the classroom you have described. This benefits the students greatly because they know that they can go to either of the teachers for help allowing for a more effective learning experience.

Based on Nii's positive (and negative) experiences, Nancy was able to come away with a positive view of collaboration.

The ability of candidates to learn from each other's experiences was driven home by a contrasting collaborative experience described by a different candidate. This candidate wrote only of the negative elements of collaboration she had observed and condemned the use of an inclusion teacher as "a waste":

I have been able to observe a "co-teaching" classroom since the start. I place co-teaching in quotes because though there are two professionals for a single group, they do not share instruction.... The approach that closest resembles the class is that of the 'One Teach, One Observe.'

.... The GE teacher teaches all the students, he helps them equally and answers their questions, he praises them and quiets all kids down when necessary regardless if they are "his" or not. There is however a clear distinction in responsibility of the kids between both teachers. The GE teacher does not grade their work or collect their assignments, he directs the students to the SE teacher who usually sits in the back of the room with his back to the kids, not following class instruction or helping "his struggling kids".... I feel that classroom communication is guarded. Even though the teachers spend the majority of the day together, they only speak [when] necessary to each other. I have seen that they

are never on the same page and they have both expressed to me that they do not like the others methods.

*I feel much fault falls on the SE teacher* [emphasis added] —he does not keep up with the GE teacher.... The SE teacher demonstrates limited familiarity not only with the content but also with the accommodations the students require. Since his back is usually to the class he rarely follows the lesson. When “his” kids struggle he does not serve as a model for them—he asks them what their problem is and is quick to make negative comments and basically shut them down.

The instructional presentation is done by the GE teacher. The SE teacher is unaware of the day/weeks lesson.... In the start of my Field Experience I thought “wow, how great for these teachers to be able to work together and accommodate to needs of the students.” As the weeks passed I found co-teaching to be less productive than what it is set out to be.

This response, and particularly the laying of blame on the special education teacher, is representative of many content area teachers, and it is disturbing to see this candidate beginning to adopt the “prejudices” against what she sees as the uninformed and unhelpful special education teacher. However, Nii’s experience stands in sharp contrast to her experience, and he posted a response to her that drew out the distinction:

I see that you have experienced a bad example of what co-teaching is. As someone from the outside looking in you should not be able to tell who are GE students and who are SE students. That is definitely not what co-teaching is about. Unfortunately there are a lot of classes like that. When there is such a clear distinction between the two populations, everyone loses, especially the students.

Nii made clear to his peer that the problem was not in the idea of collaboration per se, but in the execution in the classroom she observed. Another peer made the same point:

The lack of planning and communication between the GE and SE teacher I think makes the students think the SE teacher is more of an assistant or aide. I do not think it is a waste of the second licensed/trained professional. I personally think it is a matter of being able to work as a team and actually working an equal amount. At least you were able to observe what changes can be done if you are ever in the situation to have to co-teach.

Together, both comments asked the candidate to hold off on her dismissal of co-teaching as a waste and to think about the importance of teamwork for successful collaboration. What could easily have been a negative reinforcement of stereotypical views (collaboration is a waste of resources, special education teachers have little to contribute) was reframed through the interactions and incisive commentary of peers on the Discussion Forum.

## **Constructive Challenges to Dispositions**

Finally, and perhaps most powerfully, there were times when the candidates challenged other candidates' dispositions. In the thread below, we see one candidate calling another to task about her remarks on the predominately Hispanic population that the schools serve.

Gina: One can argue that the general student body of [the school] fails at standardized testing because it is predominantly attended by Hispanics.... Perhaps other factors influence students to not learn effectively, such as poor funding or incompetent teachers. Nevertheless, teachers seem to set high standards, but some students simply do not excel in standardized tests.

Her peer responded in a constructive but pointed way about the potential racism in Gina's remarks about "Hispanics."

Elisa: I'm not too clear about your last comment. Do you mean that the school is a failing school? That they all failed a standardized test or that Hispanics cannot pass a standardized test? I find the problem not to be about race but that standards within districts are low compared to what the state wants. Kids in school are passing their tests and then when they take the standardized tests they fail.

As discussed elsewhere, this interaction indicates the power of peer-on-peer interaction, without the intervention of a University-Based Teacher Educator. Moreover, the relative anonymity of the Discussion Forum, and the fact that each candidate can take his or her time to frame and reflect on comments in a way that is impossible during class discussion means that uncomfortable issues (such as the one above) can be handled thoughtfully, tactfully, and without distracting emotion.

## **Conclusion**

Our study evolved out of necessity. We were aware that our Field Experience was not working and that we needed an expedient solution that did not require resources or wholesale programmatic changes but would allow candidates to get the most out of their work in the field. Also, our study was designed out of pragmatic need with the goal of utilizing technology to better serve the needs of the candidates.

The use of focused assignments in the interactive environment of the Discussion Forum using Blackboard allowed us to reach our goal of creating a more meaningful field experience that encouraged candidates to be more interdependent (with each other) and independent learners, thus creating a powerful interdependent learning community. When candidates needed help or support, their peers provided constructive comments or shared experiences on the Discussion Forum. This allowed candidates to rethink or contextualize what they thought they "saw" in the classroom, and the peer-to-peer interaction allowed them to process their experiences without intervention from their University-Based Teacher Educators. In addition, the Discussion Forum allowed candidates to share and think through the positive and negative experiences of the whole group. This process widened the range of candidates' experiences from the field observation and deepened their understanding of many issues they witnessed and will potentially face in the profession.

Our experience also suggests that this combination of technology and focused assignments can help create more assertive and independent candidates. The online platform forced candidates to be active, self-directed learners. For example, one part of the Blackboard Discussion area had been reserved for University-Based Teacher Educators' Announcements; by the end of the semester, candidates were posting "announcements" for each other. The candidates' "announcements" included informational postings such as school calendar changes and Mentor Teacher paperwork as well as pertinent articles and professional development material they thought their peers might find interesting. This action suggests that the candidates felt ownership over and empowered to contribute to the learning in the course and that they are moving one step closer along the road to becoming teachers who will be able to negotiate the school environments in which they plan careers.

### Limitations

Swenson and Redmond (2009) cautioned that we have much to learn about how to use "innovative learning tools to create effective and appropriate learning experiences" (p. 9). Borko, Whitcomb, and Liston (2009) expressed a similar concern, arguing that while the educational potential of new technology is "only beginning to be reached" (p. 4), there is a gap "between development of new tools and online experiences and research efforts to examine their effectiveness" (p. 6). This case study is one such piece of research that has been advanced to allow educators to learn from our experience of using an online, interactive student-centered learning community to enhance field experience.

We knew candidates in our study needed guidance to make meaning out of and reflect deeply on their time in the field. So, we delivered structure through focused assignments and peer interaction in an online format. While we were satisfied with the results of our study, additional research could be conducted that compares two sets of candidates—one with focused assignments and an online discussion board; the other with a face-to-face class linked with the field experience course—to investigate what is lost and what is gained through this technological and pedagogical innovation.

The limitations of this study are also its strength. Alger and Kopcha (2009) described a large-scale, whole-sale revision of the student teaching experience as transformed through the possibilities of technology. However, this study was far simpler. Some of the benefits of our work lie precisely in its limitations in that it can be easily adopted and adapted for a range of institutions and programs.

### AUTHOR NOTES

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# An Examination of Learning Formats on Interdisciplinary Teamwork Knowledge, Skills, and Dispositions

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Although interdisciplinary teamwork is a recommended practice and important for coordinated interdisciplinary programming in special education, there is limited research on pedagogical practices to prepare professionals to work together effectively. This study examined the effectiveness of a graduate interdisciplinary teamwork course taught through two distinct learning formats (week-long face-to-face and hybrid) on graduate students' teamwork knowledge, skills, and dispositions. Using the How People Learn framework (National Research Council, 2000), further analysis was conducted to consider the relationship of students' prior teamwork experiences to their entry-level knowledge and satisfaction with course features. Results indicated that students in both learning formats reported improvements in teamwork knowledge and skills; however, differences in learners' prior experiences and their satisfaction with the course, course structure, assignments, and activities was found. Further examination of pedagogy is needed to characterize how professionals are prepared with knowledge, skills, and dispositions for effective teamwork.

**Keywords:** interdisciplinary teamwork, teaching teamwork, higher education, pedagogy, learning formats, hybrid

Interdisciplinary teamwork is an essential component to the provision of services in the health care and education environments (Friend & Cook, 2010; Greiner & Knebel, 2003; Oandasan et al., 2004). In the healthcare system, effective teamwork is integral to improving the quality of patient outcomes, enhancing patient and workplace safety, and increasing job satisfaction among healthcare professionals (Oandasan et al., 2004). Likewise, effective teamwork is an effective catalyst for creating an exemplary school environment and maximizing positive outcomes for students (Giangreco, Edelman, Luiselli, & MacFarland, 1998; Hunt, Soto, Maier, Liboiron, & Bae, 2004; McLaughlin, 2002). Although research identifies the needs and value of interdisciplinary teamwork in professional practice and preparation programs, the specific content and pedagogy have not been described.

Interdisciplinary teamwork is widely recognized in legislation and best practice policy, and should be an integral component of professional preparation for all disciplines. This is particularly pertinent to special education as the most recent reauthorization of the Individuals with Disabilities Education Improvement Act of 2004 mandates interdisciplinary teamwork in several areas—assessment, development and implementation of individualized education programs, education in the least restrictive environment, discipline and behavior support plans, and transition services (Hanft & Shepherd, 2008). The No Child Left Behind Act of 2001 also conveys the importance and necessity of collaboration and cooperation to achieve improved educational outcomes for all students (Handler, 2006).

Moreover, many professional organizations affirm the importance of teamwork and collaboration in serving students with disabilities. According to the Council for Exceptional Children (2009), collaboration is one of ten common core professional practice standards for all special education teachers, with emphasis on knowledge of collaboration models and strategies, roles, and communication with families, school and community personnel. Teamwork and collaboration are also included in the code of ethics, standards, or practice statements for other professional organizations, including the National Association of Social Workers (2008), the American Occupational Therapy Association (2010), the American Physical Therapy Association (2009), and the American Speech-Language-Hearing Association (2008). Special education literature emphasizes collaborative teamwork and problem solving for instructional programs, particularly for the inclusion of students with disabilities in the general curriculum, which depends on effective integration of multiple disciplines (Dettmer, Thurston, Knackendoffel, & Dyck, 2009; Friend & Cook, 2010; Hunt, Soto, Maier, Liboiron, & Bae, 2004).

Despite the importance of interdisciplinary teamwork from legal and professional standard perspectives, professional preparation continues to occur within discipline specific programs focused on training professionals on their individual roles, skills, values, and theoretical perspectives. In a study by Mellin and Winton (2003), it was reported that only 7% of faculty time was spent on interdisciplinary preservice teaching and further noted that collaboration is not a part of the instructional strategies used in preservice education. This finding is confirmed in other studies. In fact, the most recent nationally representative survey on personnel preparation in special education found only 53% of special education teachers and 29% of general education teachers received content on collaboration in their preservice education (Carlson et al., 2002).

Evaluations of interdisciplinary personnel preparation programs have revealed that program graduates report frequent opportunities in practice to use teamwork skills and to develop confidence in their abilities to communicate and collaborate with families and other professionals due to their interdisciplinary training (Chen, Klein, & Minor, 2009; Crais et al., 2004). Researchers also report a need for an education system that supports interdisciplinary, collaborative practice (Lerner, Magrane, & Friedman, 2009; Oandasan et al., 2004; Rodger & Hoffman, 2010; Thistlethwaite & Moran, 2010). Nevertheless, the concern of Moore, Fifield, Spira, and Scarlato (1989) persists 22 years later: “a recurrent theme in the literature on team decision making in special education is the general absence of training in the dynamics of group process” (p. 52). Thus, having a common knowledge base of interdisciplinary teamwork is critical because of its influence on later practice.

In addition to the call for teaching teamwork, there is an increasing shift from traditional teaching formats to providing instruction through different means, including modified schedules and blended instruction. Modified schedules, such as intensive, weekend, or evening courses, accommodate the needs of working students, while online and blended instruction models promote self-directed learning, can meet the needs of students across a greater geographical region, and prepare them for the realities of online collaboration in their careers (Lim & Yoon, 2008). Blended instruction models, also called hybrid, involve a mix of traditional face-to-face course time with online learning technologies (Lim & Yoon, 2008). The purpose of this study was to evaluate the effectiveness of two distinct learning formats (hybrid and week-long face-to-face) in promoting student learning outcomes related to interdisciplinary teamwork.

## Study Context

At a large urban university, interdisciplinary teamwork courses were established because of interdisciplinary grants and university-affiliated programs designed to support people with developmental disabilities. Over time, the courses evolved, but the premise remained the same. This is clearly articulated by Garner and Orelove (1994).

In addition to learning and practicing the knowledge and skills of their highly specialized disciplines, all professionals now need to learn how to be a member of a team, which involves skills such as communicating effectively with others, collaborating in problem solving and decision making, and maximizing the benefits of the overlap among the helping professions. (p. xii)

## Course Formats and Teaching Strategies

This study focused on the required interdisciplinary graduate course affiliated with two grant-supported personnel development programs, which were offered in different semesters with distinct learning formats. Both courses were team taught, with the first author teaching both courses alongside a faculty member from the respective grants. Course 1 focused on preparing school nurses for work with students with disabilities. This course was developed to meet the needs of the students supported by the grant, who were working professionals in school systems and who were affiliated with universities across the state. In response, this course was developed for the grant and provided in a central location with a shortened course schedule during the summer. Course 2 was taught weekly over one semester in a hybrid format (with ten face-to-face class meetings and six online modules). This course was developed in response to national and university priorities for developing online and distance learning opportunities. Participants in this course completed the course as required by a personnel development grant (focused on leadership in working with students with developmental disabilities and their families). Both courses (Course 1 and Course 2) enrolled students from other disciplines not involved in the personnel development grants.

Both interdisciplinary courses had the same instructional and learning objectives—to promote teamwork knowledge acquisition, skill development, and commitment for effective interdisciplinary services for students with disabilities and their families. These courses were designed to build foundation knowledge of specific team processes, teamwork models, team development, meetings, communication, decision-making, and problem solving through readings, lectures, and demonstrations. Class experiences provided application opportunities within interdisciplinary student teams that were continuous throughout the course and configured to represent the diversity of students' disciplines and experiences.

All student teams completed a case-oriented project on current issues in special education and developmental disabilities, such as inclusion, accountability, and challenging behavior. As projects progressed, teams were prompted to use effective team process skills (e.g., agendas and assigned roles) via faculty observation and feedback as well as self-reflection. Students also completed several individual assignments, including interviewing a professional from another discipline and writing a final reflection paper about individual and team development. Although

students were graded on these assignments, these assignments were not analyzed as part of this study.

Both courses were guided by the How People Learn (HPL) framework, which identifies four lenses as critical to effective learning environments (National Research Council, 2000). The learner centered lens considers prior experiences, culture, and existing knowledge, skills, and attitudes as a starting point for teaching and learning. The knowledge lens focuses on teaching strategies and learning opportunities for the development and application of deep knowledge. The assessment lens highlights frequent opportunities for students and teachers to monitor teaching and learning throughout the learning process. The community lens emphasizes social learning opportunities that provide ongoing challenge and scaffolding to promote meaningful learning. Table 1 illustrates the relationship of the learning activities and measurement methods to the HPL framework.

**Table 1**  
**Teamwork Teaching Strategies and Measures**

HPL Lens	Teamwork Instructional Activity	Teamwork Measure
Learner centered	Reflection on prior experience	Student background survey Self Assessment of Teamwork Skills (pre-test) Alexander Case Study (pre-test on family-centered attitudes)
Knowledge centered	Disciplinary perspectives Team strategies	Discipline interview report Team Profile (Olson & Murphy, 1999)
Assessment centered	Observation of Teams	Faculty feedback on specific skills Self Assessment of Teamwork skills (post-test) Reflection paper
Community centered	In-class team meetings Team case projects	Faculty led feedback on Team Profile Student and faculty feedback

Again, the purpose of the study was to examine the effectiveness of two learning formats in teaching interdisciplinary teamwork. Learning outcomes were examined by analyzing changes in participants' teamwork knowledge, skills, and dispositions, as well as their perceptions about the course effectiveness across two course delivery formats.

## Method

The study was conducted following approval from the university institutional review board. The second author, who was not an instructor for the courses, presented information on the study to all students and conducted the informed consent on the first day of the courses. Students were given a choice as to whether data was used for the research study, without the instructors having knowledge of their decision as all study materials were collected as part of course assignments. Informed consents were not released to the course instructor until course grades were submitted to reduce perceived potential risks related to participation effect on course grades.

This study was conducted during consecutive semesters with a total of 35 graduate students (19 in Course 1 and 16 in Course 2). Initially, students were surveyed for background information about their disciplines, prior teamwork experiences, and current roles. Two pre-post measures, *Self Assessment of Teamwork Skills* (adapted from Garner, n.d.) and the *Alexander Family Case Study* (Snyder & McWilliam, 1999) were used to examine perceived and demonstrated changes, respectively, in teamwork knowledge, skills and dispositions. Finally, students provided feedback about course structure, experiences, and learning outcomes through end of course evaluations. Measures were administered to all students; however, some students did not complete some measures or items, which resulted in missing data. Analyses included all of the available data to more fully characterize the range of students' outcomes and perspectives.

**Self Assessment of Teamwork Skills.** This 45-item self-assessment was adapted from Howard Garner (n.d.), for students to reflect on and evaluate their own teamwork skills. Students rated themselves on team skills at the beginning and end of the course. Ratings are based on a 6-point Likert type scale, ranging from *very skilled* (1) to *not at all skilled* (5), with (6) being unsure of the skill. The self-assessment measures teamwork competencies, including communication skills, decision making, conflict management, and role formation. Internal consistency reliability estimate, Cronbach's alpha, was .98 for the study sample.

**Alexander Family Case Study.** This short case study and 42-item questionnaire (Snyder & McWilliam, 1999) measures skills in applying family-centered principles. Specifically, it examines professional dispositions about family team members' concerns with professionals and intervention methods, as well as maternal stress. Responses for each statement are rated along a 5-point Likert type scale, with the student rating practices which (1) they *definitely would not do* to (5) those which they *definitely would*. An overall score is derived from the sum of all item scores, with higher scores indicating superior family-centered application skills. Concurrent validity of the Alexander Family Case Study was established in relationship to another family centered questionnaire, *Issues of Early Intervention* (Humphry & Geissinger, 1993; P. J. McWilliam, personal communication, September 22, 2008). Initial reliability estimates of .82 were reported by Snyder and McWilliam (1999) in a study of 67 graduate students in an interdisciplinary family course. In the present study, the Cronbach alpha was .77 for the sample.

**Course Feedback Form.** The Course Feedback Form consisted of 14 Likert-type scale questions and several open-ended questions. Responses for the Likert-type scale questions ranged from *strongly agree* (1) to *strongly disagree* (6). These items focused on overall ratings of the course (course satisfaction and willingness to recommend this course to others), instructional value of

specific course assignments and activities, and the course format. Open-ended questions solicited overall comments on activities and assignments, readings, knowledge gained, areas of strength, and areas for improvement.

## Results

Course 1 (face-to-face) students represented five disciplines (Table 2) with 15.11 mean years (*SD* 10.5) experience. Eighteen of the nineteen students were currently working in their disciplinary field and had direct work experience in special education. Course 2 participants represented six disciplines and included one family member, with a mean of 4.62 years (*SD* 5.0) of previous experience. During the course, two participants were working in their fields and twelve were fulltime students, with five having previous experience in special education, but not currently working in the field.

**Table 2**  
**Participants' Disciplines and Prior Teamwork Experience**

Disciplines	Frequency	Mean # Years Experience
<u>Course 1</u>		
Nurse	8	19.4
General education teacher	6	12
Special education teacher	2	15
Social worker	2	10.5
Related service provider	1	9
Subtotal	19	
<u>Course 2</u>		
Nurse	5	1.6
Special education teacher	3	7.3
Genetic counselor	3	1
Related service provider	2	8
Psychologist	1	15
Social worker	1	4
Family	1	6
Subtotal	16	
Total	35	

On a pre-course student background survey of teamwork skills, Course 1 and Course 2 students reported current and previous professional teamwork experience. Course 1 students reported statistically significant higher use of agendas ( $t = 2.12, p = .04$ ) and use of a recorder ( $t = 3.91; p = .00$ ) in previous teams than Course 2 students. Overall, Course 1 students rated their previous teamwork experiences more positively than students in Course 2 ( $t = 2.15, p = .04$ ).



Changes in pre- and post-test scores on the *Alexander Case Study* and the *Self Assessment of Teamwork Skills* were used to analyze changes in participants' teamwork knowledge, skills, and dispositions. *Alexander Case Study* scores increased for both classes, but with no significant change in students' application of family-centered principles to the specific case (Table 3).

**Table 3**  
**Overall Mean Score, Standard Deviations, and Differences Across Courses**  
**Between Pretest and Posttest Alexander Case Study**

	<i>N</i>	<u>Pretest</u>		<i>N</i>	<u>Posttest</u>		Mean Difference	<i>t</i>	<i>p</i>	Effect
		Mean	<i>SD</i>		Mean	<i>SD</i>				
Course 1	13	123.38	6.54	13	124.46	8.48	1.08	.492	.632	.14
Course 2	12	128.08	12.84	12	131.42	6.08	3.34	.948	.364	.33
Total	25	125.64	10.14	25	127.80	15.86	2.16	1.08	.292	.16

*Based on a scale from 1 (definitely would not) to 5 (definitely would).  $p < .05$*

Analyses of the dependent *t*-test pre-and post-test scores for the *Self Assessment of Teamwork Skills* revealed significant changes in students' self-assessments, with both student groups rating their skill levels higher on the posttest (Table 4).

**Table 4**  
**Overall Mean Scores and Differences Between Courses'**  
**Pretest and Posttest Self-Assessment**

	<i>N</i>	<u>Pretest</u>		<i>N</i>	<u>Posttest</u>		Mean Difference	<i>t</i>	<i>p</i>	Effect
		Mean	<i>SD</i>		Mean	<i>SD</i>				
Course 1	11	100.18	22.51	11	82.64	25.37	17.54	2.33	.042	.73
Course 2	9	121.67	30.74	9	100.56	29.21	21.11	2.37	.045	.70
Total	20	109.87	28.01	20	90.70	19.17	19.17	3.41	.003	.69

*Based on a scale from 1 (very skilled) to 5 (not at all skilled) and 6 (unsure of skill).  $p < .05$*

Analyses of course feedback showed statistically significant differences across classes regarding course format (satisfaction, recommended model, and convenience; Table 5). Students in Course 1 (face-to-face) were more likely to express satisfaction with the course and its structure as well as course methods to teach teamwork and assignments. Participants commented on the convenient course schedule, face-to-face interactions, and value of learning experiences. Students in Course 2 (hybrid) agreed that sufficient time was scheduled; however, overall course satisfaction and course structure appraisals were neutral. Students reported dissatisfaction with online course components, and expressed confusion with location of online materials and assignment submission procedures as well as difficulty with online discussions (e.g., "I have difficulty

debating online. I prefer in-class debates”; “the discussion boards get really lengthy...people end up saying the same things over and over and I didn’t find it very beneficial”). Others noted lack of self-motivation to use online resources unless required as well as low engagement in online discussion of readings. A few students made positive comments about the online format, especially that the self-paced nature of the format allowed greater reflection and opportunities for balanced participation (such as “the louder students would probably dominate” in-class discussions).

**Table 5**  
**Overall Mean Scores, Standard Deviations, and Differences Between Course Feedback**

	<u>Course 1</u>			<u>Course 2</u>			<i>t</i>	<i>p</i>
	<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>		
<u>Overall Course</u>								
Overall I was satisfied with activities	18	1.17	.514	13	3.08	1.115	6.41	<.0001
I would recommend this course	19	1.11	.315	13	3.54	1.127	8.96	<.0001
I would recommend the format	19	1.37	.761	13	2.77	1.166	4.12	.0003
I learned valuable approaches	19	1.11	.315	13	2.62	1.193	5.29	<.0001
The activities helped me learn new approaches to teamwork	19	1.00	.000	13	2.77	1.013	7.6	<.0001
The level of team interaction was high	19	1.05	.229	13	2.46	1.127	5.33	<.0001
<b>Total Course Satisfaction</b>	<b>18</b>	<b>1.14</b>	<b>.310</b>	<b>13</b>	<b>2.87</b>	<b>.926</b>	<b>7.43</b>	<b>.000</b>
<u>Instructional Strategies &amp; Activities</u>								
Sufficient time scheduled	19	1.53	.772	13	1.85	1.114	0.96	.3437
Class was convenient to me	19	1.32	.820	13	2.31	1.316	2.63	.0134
Parent panel was a good experience	18	1.50	.857	11	3.45	1.695	4.12	.0003
Team assignment	19	1.11	.315	13	2.54	.776	7.25	<.0001
Discipline interview	19	1.95	1.22	13	2.92	1.320	2.14	.0409
Reflection paper	9	1.33	.707	13	2.62	.961	3.43	.0027
<b>Total Instructional Strategies &amp; Activities</b>	<b>9</b>	<b>1.59</b>	<b>.791</b>	<b>11</b>	<b>2.56</b>	<b>.905</b>	<b>2.52</b>	<b>.022</b>

Scale: *strongly agree* (1) to *strongly disagree* (6)  
*p* < .05

Even though class activities and assignments were identical across the 2 courses, Course 1 (face-to-face) students consistently rated items more favorably than Course 2 (hybrid) participants. Both courses were responsible for completion of a team presentation based on a case study. Course 2 comments centered on not having specific guidelines on the case presentation, while Course 1 feedback described the assignment as “very effective” and “challenging and difficult at times, but most rewarding” and “very educational.” Statistically significant differences were also evident in ratings of other assignments.

Data were also analyzed for differences in participant characteristics, teamwork competencies, and course ratings across the two classes. Years of experience in their current profession varied across classes, as Course 1 (face-to-face) participants had more experience than Course 2 (hybrid) students. Current professional experience was also different across groups. Only two Course 2 participants (5.71%) were actively working in their professional setting while taking the

interdisciplinary class, five full-time students (14.29%) were no longer working as professionals, and 23% were not currently working primarily with children with disabilities in a school or other direct setting, nor anticipated future roles. This was reflected in course evaluations, such as “I still do not see why my discipline is required to take this course.” This contrasted sharply with the week-long course in which 91.4% of the course participants were actively working with children with disabilities in their professional settings, and the remaining 8.6% expected to work with students with disabilities upon graduation.

## Discussion

Results show differences between the two interdisciplinary courses, particularly in the areas of learners’ prior experience and learners’ satisfaction with the course, course structure, assignments and activities; improvements in teamwork knowledge and skills; and use of technology. Students with more extensive, relevant work experience were more satisfied with the pedagogy and format and rated their learning outcomes positively. Specifically, they rated the course activities and assignments as more valuable learning experiences. This raises questions about the needs of novice learners (those with little prior knowledge or content understanding) to acquire a conceptual framework and a substantial body of knowledge prior to transferring that knowledge into practice (National Research Council, 2000). These courses presented teamwork content, but also required learners to practice those skills frequently. Experienced practitioners have an existing knowledge framework and motivation to learn relevant skills, which facilitates their acquisition and transfer of new knowledge. These learner characteristics may explain why experienced students in Course 1 found the learning activities useful for deeper learning and understanding, while students in Course 2 lacked the experiential basis for understanding the rationale for learning teamwork skills.

Despite these findings, students in both classes judged that they improved in their teamwork knowledge and skills, with Course 2 (hybrid) students seeing more improvements than Course 1 (face-to-face) students. Course 2 students’ perceptions of growth could be a function of having less experience (with more room for growth) rather than an indication of different effects of learning formats; however, the format effects (face-to-face vs. hybrid) need to be examined across groups with similar backgrounds to investigate this further. Because improvements were seen for both classes, the readings, course materials, assignments and activities in either format seem to promote growth in teamwork knowledge and skills.

Learner satisfaction with the interdisciplinary course was hampered by technology problems for Course 2 participants who expressed concerns about their personal computer access to the Internet and slow download speeds. The structure of Course 1 (face-to-face) was rated significantly higher than Course 2 (hybrid). Course 2 participants strongly favored face-to-face classes over online modules. This may be due to the high number (75%) of full-time traditional students in this course, as previous online learning experience influences perceptions of student satisfaction (Bradford & Wyatt, 2010). It also raises the question of whether learning about team communication and conflict resolution is better supported by face-to-face interactions, where visual and auditory cues are a significant aspect of learning about team members.

## **Limitations of the Study and Implications for Interdisciplinary Teaching and Learning**

### *Limitations*

Because this study involved a small number of participants in two courses from the same university, our findings may not be generalized to other programs. Also, since participants in the two courses differed in several ways (experience, knowledge, and nature of participation), differences between the courses may not be related to the courses but to differences between participants, making it difficult to attribute participant changes to courses alone. Finally, because many of the participants in this study were also involved in other courses within their disciplines, some of the identified differences may be attributed to prior or concurrent training.

### *Implications for Interdisciplinary Teaching and Learning*

Teamwork is an essential practice standard for personnel involved in education for children and youth with disabilities. Instruction on teamwork should take into account the learners' background and experiences for planning through the use of activities to develop metacognition or through opportunities for real-life experiences. For students with little work experience, opportunities to develop application skills should be considered. Real life contexts or experiences, such as clinical practice and service learning, have been shown to be effective for team learning (Cook, 2005; Oandasan & Reeves, 2005). Learning experiences should also be informal as well, allowing time for interaction between team members and different professionals to exchange knowledge (Hall & Weaver, 2001; Oandasan & Reeves, 2005). Concurrently, students should be guided in the development of their metacognitive skills to help them make meaning of their experiences as helping learners become more active monitors of their learning facilitates their performance (Hammerness et al., 2005). Therefore, emphasis on reflection about learning goals, experiences, and changes in skill, reflective prompts, and journal entries are essential instructional strategies (D'Eon, 2005; Gallagher, Vail, & Monda-Amaya, 2008).

Further examination of pedagogy is needed to characterize how professionals can be prepared with the knowledge, skills, and dispositions for effective teamwork. Broadly, this research could examine alignment of teamwork content, targeted learning outcomes, and professional standards, as well as teaching and assessment methods for specific teamwork skills (Thannhauser, Russell-Mayhew, & Scott, 2010; Thistethwaite & Moran, 2010). Efficacy studies about curricular formats (independent course vs. embedded modules throughout the curriculum) or curricular sequences (i.e., timing in program of studies) also are needed to identify methods that address the learning needs of novice learners and experienced practitioners.

As students learn firsthand about the complex needs of children with disabilities and their families, interdisciplinary education can provide the theoretical and practical foundation for effective team assessment, intervention, and evaluation services. Identifying the most effective approaches for interdisciplinary education is an important way to improve preparation for the real world of practice.

## AUTHOR NOTES

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## Educational Tweets

*Brenda Townsend Walker*

### **So Wonderful!**

Many people have identified “favorites” that they like so much, they can’t resist recommending them to others. For example, Oprah had many favorite things over the years. Ranging from books and electronic gadgets to the redesign of the Volkswagen beetle, her favorites quickly became “must-haves.” I was reminded of that the other day when my husband’s new CD, “So Wonderful” caught the attention of several radio personalities in the UK. Much to our delight, four of his songs were named on several UK playlists of “favorites.” As we start the academic year, I hope that school leaders and teachers will engage in more professional development to improve the teaching-learning process, especially in urban and high-poverty schools. That said, I’d like to share a reading that is at the top of my list of favorite readings that can facilitate our understandings of culturally responsive teaching and leadership.

I recently came across a really fascinating dissertation on culturally responsive leadership that I’m recommending. It is especially relevant for teacher educators, school principals, and teachers as we begin the school year. Using an in-depth case study methodology, the researcher examined culturally responsive leadership in a diverse high school. Social constructivist and transformational theories grounded the study. At the outset, the researcher, Lewis Madhlangobe, shared his values, beliefs, and motivations that he brought to bear on the study. His multi-layered experiences as an African student, teacher, and principal are insightful on the need to connect instruction and curricula with the students we teach.

Madhlangobe used several data-collection procedures to understand the cultural responsiveness of a high school leader, “Faith.” He interviewed and shadowed Faith at meetings and all activities that took place during the shadowing sessions. He also examined many artifacts of her leadership. The researcher also interviewed six teachers and conducted observations in their classrooms and interviewed parents.

This study clearly helps us to understand the phenomenon of cultural responsiveness and how a school leader can influence teachers and other school personnel to embrace those principles and practices. In operationalizing cultural responsiveness, several themes emerged. Based on the findings, Faith engaged in trust and relationship-building, was inclusive, promoted the ethic of care, modeled and facilitated cultural responsiveness, embraced multiple perspectives, maintained a leadership presence, and was persistent and persuasive. In my opinion, Madhlangobe’s dissertation research is, “so wonderful.”

*Madhlangobe, L. (2009). Culturally-responsive leadership in a culturally and linguistically diverse school: A case study of the practices of a high school leader. Theses and Dissertations-Counseling, Leadership, Adult Education, and School Psychology. Paper 11. <http://ecommons.txstate.edu/eapstad/11>*



## Online Resources

*Peggy Snowden ♦ Chauncey Carr-McElwee*

**Adobe K-12 Teaching and Learning Resources** – provides countless K-12 teaching and learning resources to “engage students and give them the digital communication skills they need to succeed.” Included among the instructional resources are: the Adobe Education Exchange, Adobe digital career teaching resources, Adobe Digital School Collection teacher resources, Adobe TV K-12 Channel, and PDF Portfolios, assessment, and administrative productivity. This website also features numerous resources for the higher education community.

**The Annie E. Casey Foundation** - one of the largest private foundations in the nation. Its primary mission is to foster public policies, human services, and community supports that more effectively meet the needs of today’s vulnerable children and families. The KIDS COUNT Data Center may be of particular interest to individuals preparing grants or writing research papers. It provides access to hundreds of measures of child well-being and profiles child well-being data on a state-by-state and national level. The “How-To” tab on this page provides insightful information on ways to access, use, and cite the data. Major initiatives for which the Annie E. Casey Foundation is known include: Child Welfare Strategy Group, Civic Sites, Family Economic Success, Juvenile Detention Alternatives, KIDS COUNT, Leadership Development, and Making Connections. The foundation also works with and makes grants to state organizations to improve conditions for children.

**ASCD SmartBriefs** – a very informative education website that brings education news from popular articles and hundreds of publications. The editors compile a brief summary of each article and provide links back to the original sources. Subscribers receive a daily e-mail newsletter with a briefing on top stories in K-12 education. This website also offers free online professional development.

**HBCUs Online** – an education service company that offers accredited online degree programs and educational services through a partnership with three Historically Black Colleges and Universities (HBCUs)--Florida A & M University (FAMU), Tennessee State University, and Texas Southern University (TSU). This site also provides information about advanced certificates in select areas. Registration is free and it allows full access to information on the site. The “Resource Center” is helpful for those wanting to pinpoint their particular learning style, get online learning tips, or wanting to peruse the career resources.

**Monarch Center II: The National Outreach and Technical Assistance Center on Discretionary Awards for Minority Institutions** – an initiative funded by the U.S. Department of Education, Office of Special Education Programs (OSEP). This center was established to support special education and related service faculty from Historically Black Colleges and Universities (HBCUs) and other Minority Institutions of Higher Education (MIHEs) in the pursuit of educational excellence and the obtainment of funding from the U.S. Department of Education, Office of Special Education Programs (OSEP). The overarching goal of the center is to affect positive change in the lives of children with disabilities, particularly those from culturally and linguistically diverse backgrounds. The Monarch Center website features an array of links to

resources that support the personnel preparation efforts of its clients. The “Resources” link (found under the “Technical Assistance” tab) provides information on topics pertinent to grant proposal development and program improvement. Materials and information are drawn from national organizations and agencies as well as current research literature. Registered users can peruse an array of topics such as Recruitment and Retention of Professional Candidates; Mentoring and Induction for Special Educators and Related service Personnel; Professional Candidate Assessment; and Policies. Each topic provides access to a plethora of resources that can be useful in preparing presentations, reports, manuscripts, grant proposals, program improvement plans, and etc. The “MIHE/States” tab features links to MIHEs across the nation that either offer special education or related services personnel preparation programs or hold OSEP grants. State specific education and disability resources are also available under this heading. The “Program Improvement” and “Grant Proposal Development” sections (embedded under the “Technical Assistance” tab) provides information of particular interest to individuals who previously attended a Monarch Center supported workshop or seminar.

**National Center on Response to Intervention** – an initiative funded by the U.S. Department of Education, Office of Special Education Programs (OSEP). Working in conjunction with researchers from Vanderbilt University and the University of Kansas, the National Center on Response to Intervention provides technical assistance to states and districts in implementing proven models for RTI. This website provides a wealth of information on RTI. The “What is RTI?” link provides an explanation of RTI, the essential components of RTI, and a graphic to navigate through the essential components. The “Implementing RTI” link presents information on Response to Intervention through four stages—exploring and adopting, planning, implementing, and continuously improving. The “Resources” link provides numerous resources organized by type of resource. The “State Assistance” link provides information on how states can request a range of technical assistance activities. Though geared for states and districts, teachers and administrators are sure to find the information useful.

**TeacherVision** – a popular website for teachers that features many K-12 resources that can save teachers time and make learning fun for students. TeacherVision has an extensive online library of lesson plans, graphic organizers, printables, etc. to “help teachers enhance student learning, meet local and national educational goals, and manage their teaching lives and classrooms with ease.”

**What Works Clearinghouse** - an initiative of the U.S. Department of Education’s, Institute of Education Sciences (IES). Information on this site is geared for educators, policymakers, and the public. What Works Clearinghouse produces an abundance of resources that address a wide range of areas—“it produces user-friendly practice guides for educators that address instructional challenges with research-based recommendations for schools and classrooms; assesses the rigor of research evidence on the effectiveness of interventions (programs, products, practices, and policies), giving educators the tools to make informed decisions; develops and implements standards for reviewing and synthesizing education research; and provides a public and easily accessible registry of education evaluation researchers to assist schools, school districts, and program developers with designing and carrying out rigorous evaluations.” This clearinghouse also produces new resources throughout the year, and it has a link to their partner site “Doing What Works” where educators can learn how to integrate evidence-based practices into classroom instruction. When you visit this site, check out the links to Topic Areas, Publication and Products, and Reference Resources.

## The Event Zone

Martha Jallim Hall ♦ Michael J. Maiorano

### CAEP Conference

Council for the Accreditation of Educator Preparation  
*Raising the Bar for Accreditation*  
September 8-10, 2011  
Arlington, Virginia

### CCBD International Conference

Council for Children with Behavioral Disorders  
*Facing the Future - Building on the Past*  
September 22-24, 2011  
New Orleans, Louisiana

### Association of American Colleges and Universities

*Educating for Personal and Social Responsibility: A Twenty-First-Century Imperative.*  
October 13-15, 2011  
Long Beach, California

### NSTA Conference

National Science Teachers Association  
Hartford Area Conference  
*Science Inspiring Growth*  
October 27-29, 2011  
Hartford, Connecticut

### ASCD Fall Conference on Teaching and Learning

Association for Supervision and Curriculum Development  
*Enhancing Teacher Effectiveness = Improving Student Learning*  
October 28-30, 2011  
Las Vegas, Nevada

### NAME Annual International Conference

National Association for Multicultural Education  
*Reworking Intersections, Reframing Debates, Restoring Hope*  
November 2-5, 2011  
Chicago, Illinois

### NAGC Annual Convention and Exhibition

National Association for Gifted Children  
*Advancing Potential and All That Jazz*  
November 3-6, 2011  
New Orleans, Louisiana

### ASHA Convention

American Speech-Language-Hearing Association  
*Beacons of Inspiration: Innovation to Action*  
November 17-19, 2011  
San Diego, California

### NCTE Annual Convention

National Council of Teachers of English  
*Reading the Past, Writing the Future*  
November 17-20, 2011  
Chicago, Illinois

### Area Conference in New Orleans

*Eye on Our Future*  
November 10-12, 2011  
New Orleans, Louisiana

### Area Conference in Seattle

*Science--For All, For Now, Forever*  
December 8-10, 2011  
Seattle, Washington

### NMSA Annual Conference & Exhibit

National Middle School Association  
*Taking the Lead*  
November 10-12, 2011  
Louisville, Kentucky

### Literacy Research Association

*Widening the Circle for Literacy Research and Practice: Expanding Access, Knowledge and Participation*  
November 30 - December 3, 2011  
Jacksonville, Florida

### NCSS Annual Conference

National Council for Social Studies  
*Dimensions of Diversity*  
December 2-4, 2011  
Washington, DC

### Southern Association of Colleges and Schools Commission on Colleges

*Innovation, Imagination, and Excellence: Rethinking Accreditation in the 21st Century*  
December 3-6, 2011  
Orlando, Florida