



# The VSTE Journal

## Creation of an On-line Diversity Database

*P. Doolittle, Ph.D., A. Potts, Ph.D., M. Boler, Ph.D.,  
C. Cachaper, Ph.D., L. Tabor, D. Hicks, Ph.D.,  
K. Carrico, Ph.D., S. Ariew, & A. Atkins*

### Abstract

*The purpose of the Diversity Resource Database (DRD) is to help create social equality by transforming educational practices and curricula. A primary aim of the DRD (<http://drd.multicultural.vt.edu>) is to provide print, media, and web-based resources relevant to developing "diversity-inclusive" curricula and pedagogy for use by students and faculty, as well as students and faculty at-large. As "diversity-inclusive," the database development group has a commitment to developing anti-racist, anti-sexist, and anti-homophobic curricula and pedagogies as appropriate to higher education and K-12 teaching. The aim is to educate students and faculty in colleges and K-12 schools, about critical pedagogies, and to make available curricular materials that do not merely "celebrate cultural differences" but which systematically work towards eliminating discrimination on the basis of race, ethnicity, sexual orientation, social class, physical ability, or religious preference. The development group understands "diversity-inclusive" curricula to be educational efforts that challenge institutional inequalities and the reproduction of social hierarchies in schooling. The goal is to provide materials that directly challenge, and work to eradicate, social inequalities through inclusive education.*

**W**hile more and more schools and colleges are brought on-line, care must be taken not to assume that having access to the internet will lead directly to the transformation of teaching and learning within education. Cuban's (2001) research reveals that across the disciplines, computer technology is not integrated seamlessly into the classroom, and where it is used little evidence exists to suggest that it has transformed the teaching and learning process. Cuban suggests that little change will occur without systemic educational reform, and what is important for educators to ask is, "In what ways can teachers use technology to create better communities and build strong citizens?" He emphasizes that "without a broader vision of the social and civic role that schools perform in a democratic society, our current excessive focus on technology use in schools runs the danger of trivializing our nation's core ideals" (p.197).

The VSTE Journal is published by the Virginia Society for Technology in Education. Permission is granted to copy and distribute single articles from this publication for non-profit use with copyright notice.

Contents copyright © 2006, VSTE  
All rights reserved.

## Creation of an on-line diversity database, cont'd.

Parallel to Cuban's concerns, issues were raised with regard to college students' readiness and ability to conduct responsible, meaningful, and self-regulated research on the internet when the tendency of many college students is to collect only the most easily accessible information via simplistic searches (Besser, 1995; Breivik, 1998). With these concerns in mind, members of the faculty in the Department of Teaching and Learning identified a need for a resource that could identify quality materials, which would support the teaching of diversity across all subjects. The result was the creation of the Diversity Resource Database (DRD).

The mission of the DRD is, specifically, to promote social equality by transforming educational practices and curricula within Science, Math, Technology, Social Science, and the Humanities. One of the learning outcomes promoted by the DRD is the development of educators' (K-16) abilities to develop a pedagogy and curriculum that are sensitive to diverse populations of students. The content within the DRD database is innovative. The data result from well-developed criteria through which resources are reviewed and evaluated in order to insure the integrity of the resources that are accessible through the DRD. The DRD database provides print (e.g., books, chapters, articles), media (e.g., video tapes, audio tapes, CD-ROMs), and web-based resources (e.g., web page content, online databases, professional organizations) relevant to developing "diversity-inclusive" curricula and pedagogy for use by students, faculty, and educators. By labeling the DRD as "diversity-inclusive," the goal is a commitment to the development of anti-racist, anti-sexist, and anti-homophobic curricula and pedagogies appropriate to higher education and K-12 teaching.

The goal of this paper is twofold, first, to discuss the creation and the functionality of the database. Second, to provide a thematic narrative of the types of resources, which are included in this database, and to detail the future development of the database. The thematic analysis was accomplished using an inductive document analysis of the annotations included in the database. In describing the database's creation, as well as providing a narrative synthesis of the database holdings, the paper provides an example of how qualitative research approaches can be used to create and evaluate a tool.

### Functionality of the Database

The DRD includes features that are standard in most large-scale databases, including (a) both basic and advanced search capabilities; (b) the ability to save, print, and email search results; (c) the opportunity for the public to recommend and contribute resources to the database; and (d) a well-defined help utility.

The basic search capability allows a user to enter search terms of choice, as well as standard Boolean logic operators, including AND, OR, NOT etc. The facile design provides the novice user with a simple interface, but also provides the expert user with the flexibility to enter complex searches. The advanced search is very powerful and includes the capabilities of the basic search, plus the ability to limit the search to specific resource types (e.g., books, articles, web-sites, media), specific academic domains (e.g. science, literacy, social studies), and specific academic grade levels (e.g., elementary, middle, high school, and college/university). As a special feature, the advanced search

## Creation of an on-line diversity database, cont'd.

option provides the user with the top 20 keywords used throughout the entire DRD within a pull-down menu for easy access and use. Finally, the basic and advanced search options provide the user with the opportunity to access short records (i.e., resource citations, abstracts, and library locations) and long records (i.e., resource citations, abstracts, library locations, keywords, and database thesaurus categories) (See Figure 1.) The database has flexibility to select (or “mark”) various resources obtained through a search and to print, save, or email items selected from resources. Furthermore, the DRD faculty seeks to solicit the potential contributions of experts and interested parties that are peripheral to the DRD project itself. Therefore, the DRD provides an avenue for public recommendations and contributions. All public recommendations and contributions are saved first in a temporary database and uploaded only to the DRD after review by the DRD faculty. Finally, the DRD database provides a growing number of help utilities and information based on usability and user feedback, and since the resources in the database are peer-reviewed for quality and relevance, users of the DRD are assured of receiving only high-quality, competent, and useful resources.

Figure 1. Diversity Resource Database “advanced search” option.

Advanced Search:		<a href="#">Help</a>   <a href="#">Basic Search</a>
Search for:		
<input type="text"/>	Common Keywords	These 'Common Keywords' represent the 20 most frequently cited keywords present in the DRC database.
AND <input type="text"/>	Common Keywords	
AND <input type="text"/>	Common Keywords	
AND <input type="text"/>	Common Keywords	
AND <input type="text"/>	Common Keywords	
<input type="button" value="Search"/>		
Include Only:		Display:
<input type="checkbox"/> Articles	<input type="checkbox"/> Events	<input checked="" type="radio"/> Short Record
<input type="checkbox"/> Artifacts	<input type="checkbox"/> Lessons	<input type="radio"/> Long Record
<input type="checkbox"/> Books	<input type="checkbox"/> Media	<input type="radio"/> 10 matches per page
<input type="checkbox"/> Chapters	<input type="checkbox"/> Websites	<input type="radio"/> 25 matches per page
		<input type="radio"/> 50 matches per page
Focus on:		
<input type="checkbox"/> English/Language Arts	<input type="checkbox"/> College/University	<input type="checkbox"/> Curriculum and Classroom Materials
<input type="checkbox"/> Fine Arts	<input type="checkbox"/> Elementary School	<input type="checkbox"/> Teacher Background Materials
<input type="checkbox"/> Foreign Language/ESL	<input type="checkbox"/> High School	
<input type="checkbox"/> History/Social Studies	<input type="checkbox"/> Middle School	
<input type="checkbox"/> Mathematics/Math		
<input type="checkbox"/> Media Literacy		
<input type="checkbox"/> PE/Health		
<input type="checkbox"/> Science		
<input type="checkbox"/> Special Education		
<input type="checkbox"/> Theatre		
<input type="checkbox"/> Vocational Education		

## Creation of an on-line diversity database, cont'd.

Ultimately, the DRD provides resources for teachers, instructors, and professors to engage their students in active, self-directed, and computer-based activities. For example, within a methods course, EDCI 5224 Advanced Curriculum and Instruction in Elementary/Middle School Social Studies, students are expected to develop lessons, resources, and materials that support multicultural education, equity in education, and diverse student populations. The DRD provides these students with essential text and media-based resources, sample lesson plans, access to diverse artifacts, and web-based resources that provide multiple possibilities for the inclusive classroom. In the process of interacting with the DRD, students are taught essential skills in the use of databases and students are, ultimately, shown how to develop the meta-cognitive skills necessary to become self-regulatory, self-mediated, and self-aware learners.

### Construction of the Database

The DRD was created through a collaborative effort between faculty members and graduate students. The collaboration involved a series of overlapping phases, which included the following: (a) identifying the need for a diversity resources database, (b) the conceptualization of the database, (c) the classification rubric for the selection of resources, (d) the creation of the database itself, and (e) the expansion of the database resources. Once an initial set of standards for selecting these materials were established, members of the Diversity Resource group gathered materials on the general categories of race/ethnicity, sexual orientation, social class, physical ability, and religious preference. These were annotated and entered into the database. The DRD itself is simple and intuitive, but powerful and flexible, catering to the needs of both the novice and experienced database user. The database is relational in design, created with a mind toward expansion, further development, and power. Initially, Cold Fusion's Verity Search Engine powered the database [<http://edpsychserver.ed.vt.edu/diversity>]. More recently, to institutionalize the database (2003-2004), the DRD was transferred from the initial development site and is currently housed in the dynamic virtual hosting environment run by the Web Hosting Group at the computing center on the university campus [<http://drd.multicultural.vt.edu>]. This environment permits web-based management of the web site as well as the database associated with the web site.

The DRD provides an avenue for public recommendations and contributions. The public is allowed to submit sites for review, and to allow administrators to review and revise information as needed. The "suggest a resource" utility allows end-users to enter information about materials they believe would make a good addition to the DRD. The DRD allows end-users to enter almost all of the information required in much the same state as it will be viewed, which all but eliminates the need for re-keying. The revised database provides a web interface through which administrators can review and edit entries. The administrative interface provides a list of all user-supplied resources that are waiting to be reviewed, and makes it easy for administrators to edit and approve suggested resources as well as to remove any duplicates that are entered by mistake. The administrative interface allows administrators to search through the database using an interface similar to the public interface. Administrators can use this search to review re-

## Creation of an on-line diversity database, cont'd.

cords for accuracy and to remove duplicated or irrelevant entries. In addition, there are tools that allow careful analysis of the controlled vocabularies in use in the system. One use of these tools was to reduce the list of keywords by consolidating alternate wordings and misspellings into a single keyword. The keyword searching is thus more accurate and hence more useful. In summary, the new system reproduced the functionality of the existing system and preserved the data that were collected previously. It then provided new functionality by allowing easier data collection and review.

### **Methodology for Examining Database Materials: Qualitative Meta-analysis**

The methodology we used in examining the materials entered into the database required the use of inductive methods to analyze themes in the same way that an ethnographer uses inductive methods to analyze data from interviews or case studies. This approach to meta-analysis is articulated by Noblit and Hare (1988), whose steps for performing meta-ethnography were applied more generally to our meta-analysis of the database materials:

1. Identify an interest that research might inform. In our case, we were interested in finding themes within the pre-established categories of race/ethnicity, sexual orientation, social class, physical ability, and religious preference. We were also interested in categorizing the materials in the database by subject matter (English, social studies, mathematics, sciences, etc.) and material type (books, journal articles, book chapters, or websites).
2. Determine what is relevant to this interest.
3. Read the studies, in this case the annotations of the database materials.
4. Find themes, patterns, or relationships between the studies.
5. Synthesize these findings.

The analysis group that consisted of professors and graduate students working on the project raised the following questions when analyzing potential materials for the database:

1. Does the material encourage reflection on inequalities rooted in structural and social contexts?
2. Does the material have the potential to bring about an awareness of social justice issues in ways that invite readers to ameliorate these problems?
3. Does the material depict the systematic and institutionalized character that brings about unequal access to education?
4. Does the material show examples of teaching practices that promote social change?

### **Preliminary Results of Thematic Analysis**

Through thematic analysis, the DRD development group compiled the following: *Race/ethnicity*. Resources dealing with the broad category of race/ethnicity fall

## Creation of an on-line diversity database, cont'd.

under the following subcategories: African American, Latin American, Asian American, Native American, and South Asian. The categories of Latin American and Asian American are delineated into smaller categories by nationality. Most of the resources on Latin Americans, specifically Mexican Americans, have focused on the experiences of migrant farm workers. Most materials annotated under the subcategory of South Asian are within the context of the September 11th attacks. There are few materials within race/ethnicity that are dedicated to interracial relations or bi-raciality.

*Sexual orientation.* Within this category, there are annotations for materials that explore the general topic of sexuality, the education of lesbian and gay students, and homophobia. There are few materials listed that explore bisexuality and only one annotated resource that discusses transsexuality.

*Social class.* Most of the annotations of materials dealing with social class are found within materials devoted to English/language arts or social studies. There are few resources that deal with social class under other subject areas, absent most notably in mathematics and science education.

*Religious preference.* This database contains 119 resources that address the topic of religious preference. Religious preference is found in over 80 English/language arts resources and over 80 social studies resources. These resources, in turn, tend to be edited books that deal with multiculturalism. Furthermore, there are few resources on anti-Semitism and hate crimes.

*Disability/ableism.* Out of the approximately 400 annotations in the database, ableism and disability appear only four times and nine times, respectively. There are few stand-alone resources dedicated specifically to ableism; what does appear is mainly limited to chapters of edited books.

### **Synopsis of Meta-analysis: General Description of Database by Material Type and Subject Matter**

To date, the database currently consists of 232 books, 21 journal articles, 2 book chapters, 55 websites, 33 videotapes, and other media. Of these resources, a majority of the resources in the database are in the area of English and language arts (Table 1). There are few diversity resources devoted to health /physical education and vocational education. Altogether, most of the resources selected for the database are appropriate for use in high school classrooms (Table 2).

### **Expansion of the Project**

The future of the DRD is to expand the database in two dimensions. This will expand the higher education component as a resource in all disciplines and add research on diversity. The on-campus development group (at Virginia Tech) is working to connect with faculty in each college across the campus to act as liaisons to disseminate information about the content and the progress of the database. The same liaisons will also glean resources in their discipline that might be useful to add to the Higher Education and research components. A national advisory board has been formed, and the project currently has a full-time graduate assistant working to expand the database and to up-

# Creation of an on-line diversity database, cont'd.

Table 1  
*Holdings by Subject Area*

Subject	Number of DRD Entries
English /Language Arts	206
Fine Arts	42
Foreign Language/ESL	81
History/Social Studies	184
Mathematics	26
Media Literacy	39
Physical Education/ Health	29
Science	47
Special Education	22
Theatre	37
Vocational Education	10

Table 2  
*Holdings by Educational Level*

Educational Level	Number of DRD Entries
Higher Education	82
High School	306
Middle School	233
Elementary School	146

grade the front page.

## Conclusion

Training today's teachers and preparing tomorrow's teachers to recognize and harness the potential of technology within content areas is seen as a vital and necessary role of education institutions throughout the United States (N.C.A.T.E., 1977, Panel on Educational Technology of the President's Committee of Advisors on Social and Technology, 1997). The DRD responds to this need, and yet ventures beyond the basic need for implementing technology into the realm of utilizing technology in education to help create social equality by transforming educational practices and curricula.

# Creation of an on-line diversity database, cont'd.

## References

- Besser, H. (1995). From internet to information superhighway. In R. Brook & I. Boal (Eds.). *Revisiting the virtual life: The culture and politics of information*. San Francisco: City Lights.
- Brevik, P. (1998). *Student learning in the Information Age*. Phoenix, AZ: American Council on Education/Oryx Press.
- Cuban, L. (2001). *Oversold and underused: Computers in the classroom*. Cambridge, MA: Harvard University Press.
- Noblit, G. W., & Hare, R. D. (1988). *Meta-ethnography: Synthesizing qualitative studies*. Newbury Park, CA: Sage Publications.
- National Council for the Accreditation of Teacher Education. (1977). *Technology and teacher education: New standards*. Washington, DC: Author.
- Panel on Educational Technology of the President's Committee of Advisors on Social & Technology. (1997). *Report to the President on the use of technology to strengthen K-12 education in the United States*. Washington, DC: US Government Printing Office.

## About the Authors

**Peter Doolittle** (pdoo@vt.edu), **Ann Potts** (apotts@vt.edu), **Cecile Cachaper** (ccachape@vt.edu), and **David Hicks** (hicks@vt.edu), are faculty or graduate students in the School of Education at Virginia Tech. **Lisa Tabor** (tabor@vt.edu) is a doctoral candidate in the Center for Public Policy and Administration at Virginia Tech. **Megan Boler** (mboler@oise.utoronto.ca), founder of the database, is in the Department of Theory & Policy Studies Ontario Institute for Studies in Education at the University of Toronto. **Kathleen Carico** (kcarico@mansfield.edu) is at the Department of Education and Special Education, Mansfield University of Pennsylvania. **Anthony Atkins** (anthony.atkins@vt.edu) is Systems Integrator in Educational Technologies at Virginia Tech. **Susan Andriette Ariew** (sariew@cas.usf.edu) is an instructor at the School of Library & Information Science, University of South Florida.

We thank the following Virginia Tech departments for their financial support of this project: the Virginia Tech Office of Multicultural Affairs, Virginia Tech School of Education, Virginia Tech Center for Excellence in Undergraduate Teaching, and the Virginia Tech College of Liberal Arts and Human Sciences. We also thank Dr. Ben Dixon, Vice President for Multicultural Affairs at Virginia Tech for his support of this project.



# VSTE Journal Editorial Committee

**Daniel Arkin, Ph.D.**  
 Executive Director, VSTE

**Glenna Gustafson, M.Ed.**  
 Virginia Tech

**Drew Polly, Ph.D.**  
 University of North Carolina,  
 Charlotte

**Allison Batty**  
 Fairfax County Public  
 Schools

**Kim Haskins**  
 York County Public Schools

**Cindy Rudy**  
 York County Public Schools

**Robert Cobb, Jr., Ph.D.**  
 North Carolina A&T State  
 Univ.

**John G. Hendron, M.A., M.A.**  
 Goochland County Public  
 Schools

**Gary Sarkozi, Ph.D.**  
 Virginia Commonwealth University

**Teresa Coffman, Ed.D.**  
 University of Mary  
 Washington

**Jacqueline T. McDonnough, Ph.D.**  
 Virginia Commonwealth  
 University

**Greg Sherman, Ph.D.**  
*(Editor-at-Large)*  
 Radford University

**Anthony Dralle, Ph.D.**  
 East Carolina University

**Walter McKenzie, M.Ed.\***  
 Northborough-Southborough  
 Regional School District (Mass.)

**Jeffrey Steckroth, M.A.**  
 University of Virginia

**Tricia Easterling, Ed.D.**  
 Radford University

**Ross A. Perkins, Ph.D.**  
*(Managing Editor)*  
 Virginia Tech

**Carmel Vaccare, Ph.D.\***  
 Radford University

**Jane Falls, Ph.D.**  
 Virginia Tech

**Susan N. Perkins, M.A.**  
*(Copy Editor)*  
 Virginia Tech

**John Wenrich, Ph.D.\***  
 Institute for Connecting Science  
 Research to the Classroom  
 Virginia Tech

**Bill Flora, Ed.D.**  
 Radford University

**Stephen Plaskon, Ph.D.\***  
 University of Virginia

**Gary Whitt, Ph.D.**  
 Roanoke College

**Lynda Gillespie, Ph.D.\***  
 Chesterfield County  
 Public Schools

**Marie Fort Withrow, M.A.**  
 Phillips School

\* Denotes Consulting Editor

The *VSTE Journal* is a scholarly, refereed journal comprised of articles published in an on-going manner. Downloadable from VSTE's website, the Journal contains articles that relate theories of educational technology with classroom practice. The target audience is teachers and administrators at all levels, from primary school through higher education. More information about the *VSTE Journal*, such as submission guidelines, can be found on the *VSTE Journal* web pages [<http://www.vste.org/publications/journal/index.html>]

Inquiries may be sent to: [journal\\_submissions@vste.org](mailto:journal_submissions@vste.org)