

**MATEC NetWorks Annual Report**

**NSF DUE-0501626**

**Principal Investigator: Michael Lesiecki, PhD**

**Submitted: March 31, 2010**

**On Behalf of the Division of Academic and Student Affairs**

**Maricopa Community Colleges**

## **Executive Summary**

### Overview:

The MATEC NetWorks ([www.matecnetworks.org](http://www.matecnetworks.org)) National Resource Center is in its fifth year of operation. The NSF has approved a no-cost extension of activities through June 30, 2011. NetWorks is part of the Maricopa Advanced Technology Education Center (MATEC), a member of the Division of Academic and Student Affairs at the Maricopa Community Colleges. The Maricopa County Community College District strongly supports the resource center through facilities, infrastructure, and the donation of part of the time of two employees.

The focus of the center is to provide venues for creating, sharing, and promoting a premier collection of materials, services, and programs for technical training, education, and faculty development. This directly supports learning environments and quality instruction.

### Major Accomplishments:

NetWorks digital library contains classroom ready resources that are current, relevant, and easy to implement into existing curriculum. NetWorks provides free online web seminars, blogs, and electronic newsletters to keep educators and industry members up-to-date with emerging technologies and educational issues.

In the prior years of the grant, the center's infrastructure was created and refined. This allowed significant emphasis in this reporting year (Year 5) in four major areas:

- A significant increase in the digital library collection of resources and services,
- A significant increase in the web seminar programs,
- A significant increase in the use and users of the center, and
- The development of new approaches to gauge the impact of the center's activities.

### Impact:

Resources in the digital library are accessed by educators and industry members. In June 2007, there were 240 resource entries; in February 2008, 675; in February 2009, 1,251 entries; and in February 2010, 1,399. For the NetWorks Digital Resource Library this represents a major accomplishment in providing a genuinely significant amount of resources to attract users. A systematic process of review and update of all resources has begun (over 300 have been reviewed to date). The center anticipates a small decrease in the number of resources due to attrition and dating as the review process continues.

Use of the resource center can be gauged in different ways (see the attached graphs). The center's website continues to have about 9,000 visits per month, holding steady over the past academic year. For this metric we use "visits" as opposed to "hits" to give a more realistic idea of the actual usage of the site. The numbers are filtered to remove hits initiated by automated search engines and web robots which can artificially inflate the numbers. "Full Record Visits" tell how many times a resource was sought for and found on the site. It is a good indicator of the use of the digital library aspect. For February 2010, the number of full record visits was 2,347, up from 1,529 one year ago. Roughly 1/4 of the number of "visits" results in a record access. The number of visitors to our community-building "TechSpectives" blog is another indicator of use and interest with 2,103 visits in the month of February 2010, up from 1,147 one year ago.

The center believes the integrated marketing and communications effort that ties every center activity, such as web seminars, back into the resource center is significantly and positively influencing these use numbers.

Impact is also achieved through professional development activities. In the series of 19 webinars (up from 13 last year) from March 2009 through February 2010, there were a total of 1,328 registered participants (this is a duplicated count). By any means this is a significant number for a workshop/seminar type of outreach activity. At the HI-TEC national conference, there were 523 registered attendees (up from 359 in the prior year). Although there is some duplication, the webinar and conference attendee totals of 1,851 faculty members (up from 1,798 last year) give a strong impression of the resource center's impact. Although it is very approximate, participants in professional development activities indicated (90%) that they would use the information in a classroom setting. Assuming 50% duplication, or 926 faculty members per year, if a faculty member teaches 26 unduplicated students in a course and effectively impacts 50% of them, then that would yield a student impact of  $926 \times 13 = 12,038$ .

### Effectiveness:

Registered users of the NetWorks Digital Resource Library and registrants for the web seminar series represent an important source of information regarding effectiveness. A registration system was instituted in February 2008 allowing users to log in online to download resources. As of February 2010 there are over 1,650 registered users, (up from 950 one year ago). New registered users continue to increase at 50-70 per month. In the prior 12 months, there were 1,328 registrants for web seminars. There is some duplication between these two categories, however, these figures indicate a strong interest in the center's resources and services. This sets the stage for surveys of users to determine effectiveness. The center has worked with the external evaluator to refine these "measures of effectiveness" processes (see evaluation report). An important feature of the evaluation identifies the level of evidence to support the effectiveness measures.

The effectiveness measures are based upon an accepted industry model that defines four levels. The evaluator has assigned a scoring system that ranges from 1 (little evidence to support effectiveness) to 7 (extensive evidence to support effectiveness). In summary, the evaluation report finds:

Effectiveness Level 1: Participant satisfaction, Effectiveness Score = 7

Effectiveness Level 2: Change in participant knowledge, Effectiveness Score = 6

Effectiveness Level 3: Change in teaching behavior, Effectiveness Score = 4

Effectiveness Level 4: Impact on student learning, Effectiveness Score = 2.

## Proposed Effort

In this reporting period, the center's objectives were to continue to build and refine the digital library collection, substantially increase use and user base, and focus on dissemination activities. Progress has been made in all of these areas; the digital library collection use and user base has exceeded expectations, as have the results of our web seminar series, as well as our marketing and dissemination efforts. Continued efforts to refine and build the resource collection will proceed in the subsequent time frame. A Critical Issues and Best Practices Forum is intended for the Summer of 2010 to further build the community of users and respond to their needs.

The evaluation report indicates NetWorks has a large potential to foster a "culture of evidence" for outcomes and changes in student learning. In future efforts the center will focus on establishing practices using internal and external data collection, to shape "accountable and informative" models of evaluation.

## NetWorks Goals

Goal 1: Expand involvement of the education community in contributing to national knowledge about technician preparation. This goal is focused on developing a *Collection* of resources and services. The objectives under this goal all focus on building the number of resources in the digital library, expanding the use of the resources, and expanding the user base.

Goal 2: Establish unique model programs for creating and broadly disseminating reusable learning material. This goal is focused on *Dissemination*.

Goal 3: Accelerate the ability of the national technician education community to adapt as technologies and learner needs change. This goal is focused on *Advancement* of technician education.

In the prior years of the grant, the center's infrastructure was created and refined. This allowed significant emphasis in this reporting year (Year 5) in four major areas:

- A significant increase in the digital library collection of resources and services,
- A significant increase in the web seminar programs,
- A significant increase in the use and users of the center, and
- The development of new approaches to gauge the impact of the center's activities.

## Results:

Resources in the digital library are accessed by educators and industry members. In June 2007, there were 240 resource entries; in February 2008, 675; in February 2009, 1,251 entries; and in February 2010, 1,399. For the NetWorks Digital Resource Library this represents a major accomplishment in providing a genuinely significant amount of resources to attract users. A systematic process of review and update of all resources has begun (over 300 have been reviewed to date). The center anticipates a small decrease in the number of resources due to attrition and dating as the review process continues.

In the series of 19 webinars (up from 13 last year) from March 2009 through February 2010, there were a total of 1,328 registered participants (this is a duplicated count). By any means this is a significant number for a workshop/seminar type of outreach activity. At the HI-TEC national conference, there were 523 registered attendees (up from 359 in the prior year). Although there is some duplication, the webinar and conference attendee totals of 1,851 faculty members (up from 1,798 last year) give a strong impression of the resource center's impact. Although it is very

approximate, participants in professional development activities indicated (90%) that they would use the information in a classroom setting. Assuming 50% duplication, or 926 faculty members per year, if a faculty member teaches 26 unduplicated students in a course and effectively impacts 50% of them, then that would yield a student impact of  $926 \times 13 = 12,038$ .

In surveys of users detailed in the evaluation reports, respondents indicated they used resources from the digital library as shown in the following table (reports of usage from web seminar participation indicated a similar pattern).

<b>Response</b>	<b>Count</b>	<b>% of Total Responses</b>
Updated classroom instructional materials	68	54.4
Incorporated new classroom instructional materials	57	45.6
Modified pedagogical methods	21	16.8
Tried new pedagogical methods	37	29.6
Changed the way I assess student learning	25	20.0
Updated existing topics	66	52.8
Added new emerging technology topics	48	38.4
Added a new activity to an existing course	45	36.0
Added a new course at our institution	13	10.4
Augmented current recruiting strategies	17	13.6
Implemented new recruiting strategies	8	6.4
Submitted resources to the NetWorks collection	28	22.4

Registered users of the NetWorks Digital Resource Library and registrants for the web seminar series represent an important source of information regarding effectiveness. A registration system was instituted in February 2008 allowing users to log in to download resources. As of February 2010 there are over 1,650 registered users, up from 950 one year ago. New registered users continue to increase at 50-70 per month. In the prior 12 months there, were 1,328 registrants for web seminars. There is some duplication between these two categories, however, these figures indicate a strong interest in the center's resources and services. This sets the stage for surveys of users to determine effectiveness. The center has worked with the external evaluator to refine these "measures of effectiveness" processes (see evaluation report). An important feature of the evaluation identifies the level of evidence to support the effectiveness measure.

The effectiveness measures are based upon an accepted industry model that defines four levels. The evaluator has assigned a scoring system that ranges from 1 (little evidence to support effectiveness) to 7 (extensive evidence to support effectiveness). In summary, the evaluation report finds:

Effectiveness Level 1: Participant satisfaction, Effectiveness Score = 7

Effectiveness Level 2: Change in participant knowledge, Effectiveness Score = 6

Effectiveness Level 3: Change in teaching behavior, Effectiveness Score = 4

Effectiveness Level 4: Impact on student learning, Effectiveness Score = 2.