

NWCET Best Practices

Title: Washington Center for Information Technology – aWeek@Boeing Industry Job Shadow

Challenge

The challenge of this project was to provide IT faculty at K-12 and community colleges real-world job shadow experiences. Our goals for the week were three-fold:

- Give faculty an inside look at what skills and knowledge are required for success as a technology worker in the high-tech field.
- Provide faculty with experiences that make skill standards come alive
- Enrich faculty ability to develop curriculum activities based on this experience that will prepare students for meaningful work in the field.

Solution

Developed from a suggestion by a member of the WCIT Industry Advisory Board, the initial aWeek@Boeing was devised to pair WCIT educators with members of the Boeing Technical Excellence Fellowship for a week-long information technology job shadow. As a result of the success of this first effort, a second aWeek@Boeing was planned and implemented a year later, incorporating lessons learned during year one for an even greater response and benefit.

To develop and guide the job shadow program, an implementation team was created with representation from WCIT program management, the Boeing Technical Fellowship, Boeing management, and Boeing Education Relations. The implementation team facilitated outreach to the Boeing executive network, Boeing technical excellence leadership network, WCIT educators and grant program management, Bellevue Community College administration, the Washington State Board for Community and Technical Colleges, as well as other state education agencies via the WCIT Steering Committee.

An overview of the proposed job shadow experience was presented to WCIT faculty at the Annual WCIT Retreat in May 2003. Participants were asked to indicate potential interest by a show of hands, and a discussion regarding optimal timing for the sessions ensued.

Since time was of the essence, from the outset the implementation team recognized that planning would have to be along three parallel lines launched simultaneously:

1. Administrative/logistics planning

- Define optimal dates for the program. After polling potential educator participants at the program overview presentation, two weeks in August were selected as least likely to interfere with school schedules.
- Define the structure of the job-shadow week. Kick-off and wrap-up sessions were planned for Monday morning and Friday afternoon, respectively. Session venues were chosen and secured. Attendee lists and agenda for these sessions were set. Job shadow planned to take place

Monday afternoon through Thursday afternoon. (Friday morning reserved for WCIT educators to prepare wrap-up presentation.)

- Kick off (1.5 hour) – Participant introductions, Boeing in technology overview, WCIT overview, program logistics and expectations, refreshments provided. All participating parties required to attend.
- Wrap-up (3 hour) – Educator participants report out on their experiences during the week, general discussion on lessons learned, refreshments provided. WCIT educators' attendance required, Boeing hosts' attendance encouraged.
- Define expectations and benefits for Boeing and WCIT

Boeing Host Expectations

- Provide WCIT participants with "on-the-job" experiences at Boeing
- Include participants in normal work activities
- Interact around (?) on methods, techniques, approaches and tools required to complete tasks
- Integrate knowledge gained from participants into work (I don't understand)

WCIT Educators Expectations

- Come with open minds
- Produce deliverables within job assignment
- Participate in two-way knowledge transfer
- Produce wrap up presentation - individual reports/lessons learned - at closing session
- Produce detailed wrap-up report to be posted on WCIT web site - within two weeks of activity close
- Take knowledge back to classroom via improved, skills infused curriculum

- Develop Implementation Team meeting schedule and task/resource list
- Secure and execute a non-disclosure agreement (NDA) covering all WCIT participants (Boeing requirement)

2. Boeing Coordination Tasks

- Approach Boeing Technical Excellence Leadership Team and Boeing management to secure buy-off and endorsement (endorsed by VP of Engineering and Technical Excellence, University Relations Process Council, VP of Computing and Network Operations and the Northwest Technical Excellence Council)
- Recruit and develop list of potential Boeing participants from within the membership of the Boeing Technical Fellowship/Technical Principals
- Invite all potential Boeing hosts. Invitation included brief overview of WCIT project, description of job shadow activity and expectations, the no-cost aspect of the activity, and a request for interested professionals to respond to Boeing Implementation Team members.
- Confirm positive responses with host and managers
- Match confirmed WCIT educators with confirmed Boeing hosts

3. WCIT Coordination Tasks

- Invite all WCIT educators via email. Invitation included session week options, potential assignment location, funding/stipend payment information, general activity description, expectations and benefits for both Boeing and WCIT. (WCIT participants were encouraged to apply for State funds for professional development to cover per diem expenses and in addition were paid a stipend from grant funding for participating in the job shadow.) The invitation closed with an RSVP form for interested educators to complete and return indicating session week choice, home institution, instructional area (for matching purposes), and citizenship (Boeing requirement).
- Confirm positive responses
- Relay participant names and information to Boeing Implementation team for matching
- Communicate final logistics (maps, directions, hotel choices) with WCIT participants

2003 aWeek@Boeing – Year One

Over two weeks in August, 2003 aWeek@Boeing matched five WCIT educators with four members of the Boeing Technical Fellowship. One Boeing professional served as a host to two separate educators, one in each week. Due to work demands, one WCIT educator was hosted by two Boeing professionals during the week – one Associate Technical Fellow one senior IT professional.

At the close of the activity, written evaluations from both Boeing and WCIT participants were collected and compiled to glean lessons learned. The compiled results and lessons learned were posted to the WCIT web site. After receiving content approval from Boeing, detailed final reports from WCIT educators were posted to the WCIT web site. The job shadow activity was reported to The Boeing Company world-wide via the Boeing News Network (BNN) and subsequently posted to the WCIT web site.

A month after activity close, the 2003 aWeek@Boeing implementation team met to discuss lessons learned, next steps and potential sessions for the following year.

Year One Lessons Learned

Closely matching skill sets and availability between WCIT educators and Boeing hosts was challenging.

WCIT educators' instructional areas as indicated on the RSVP did not easily correlate with Boeing hosts' job skill categories. Written evaluations returned at the end of the activity revealed two of the five matches were less than perfect. This resulted in a somewhat irrelevant "content" experience for educators, although the "context" experience (real-world IT employment) was valuable from a larger perspective. When possible, Boeing hosts in a mismatch introduced their

WCIT guests to other qualified Boeing personnel who could share their knowledge and expertise with the educator. In other cases, WCIT educators gained valuable experience by attending meetings, witnessing team work in action, and discussing general employability skills required for successful IT employment.

2004 aWeek@Boeing – Year Two

Just before the aWeek@Boeing implementation team met in the early spring 2004, the team learned that Boeing Wichita had replicated the original aWeek@Boeing in their Kansas plant. Basing activities on the previous year, taking year one lessons learned into account, and borrowing a new activity from the Wichita session – a follow-up survey to WCIT participants asking for narrative on specific impacts arising out of their job shadow experience – the aWeek@Boeing implementation team went ahead with plans for year two.

At the Annual WCIT Retreat in May 2004, WCIT faculty who were involved in the 2003 aWeek@Boeing, participated in a presentation outlining the job shadow program and highlighting activities and benefits from the previous year. At the close of the presentation, interested faculty were asked to complete and return a form indicating session week choice, instructional areas, and other information required for documentation, stipend payment and citizenship.

In August 2004, eight senior Boeing IT professionals and their respective groups hosted seven WCIT educators for a one-week job shadow. The lesson learned from year one was to make better host-educator matches. Recent organizational changes within Boeing expanded the pool of potential hosts beyond the Boeing Technical Fellowship. This provided the implementation team with a wider choice of suitable Boeing hosts for each WCIT participant. The result was even better than expected: not only were the WCIT-Boeing teams better matched than in the previous year, Boeing hosts were motivated to create highly beneficial experiences for their educator guests. Without exception, WCIT educators were treated to interactions with a wide variety of IT professionals in their assigned team, and as a result a very deep and rich experience of The Boeing Company and its IT applications.

Interested in giving WCIT participants the widest possible view, the implementation team invited a well-known Boeing specialist in Process Management and Education/Industry Relations to speak to the educators in a mid-week session. This meeting proved to be an invaluable look at aspects of industry not often addressed in educational settings, and a compelling argument for relationship building between industry and workforce education.

As with year one, written evaluations were received from all participants. Results from these evaluations were compiled, gleaned for lessons learned and posted to the WCIT Web Site. Detailed final reports from WCIT participants were submitted, and after content approval by Boeing hosts, posted to the web site as well.

2004 aWeek@Boeing Expectations

Year one expectations were replicated with one addition taken from the Wichita aWeek@Boeing model. WCIT educators would be asked to:

- Complete follow-up survey during Fall 2004 addressing the following questions
 1. How did you transfer lessons learned into meaningful lessons in the classroom?
 2. In what way did you contribute to improvement of the curriculum?
 3. How did interaction with students change or improve?

Year Two Lessons Learned

Second year lessons learned were gathered by considering What Worked/What Could Be Better Next Time:

What Worked

- Mid-week session on broader aspect of IT employment was extremely beneficial for educators and very well received.
- Matching was very successful due to increased detail of information about educators' expertise and desires AND an increase in the pool of potential Boeing hosts.
- Boeing "primary" host "shared the WCIT guest with others in the Boeing workgroup, giving the educators a very broad range of interactions and experiences.
- The August timeframe worked very well with educators' school schedules

What Could Be Better Next Time

- Facilitate contact between host and educator prior to job shadow session to facilitate strategies and plans for the week's activities.
- Communicate schedule of activities for all participants ahead of time, including activity agenda and attendance expectations.
- Outline a list of suggested guest – host communication protocols.
- Obtain clear confirmation from participants (educator and IT professional) to avoid potential no-shows.

Outcomes and Benefits

In addition to IT-area specific information introduced in the classrooms, educators reported on the value gained by hands-on experience in the IT job site, the strong emphasis placed on employability skills (e.g., team work, communication skills) by their hosts, and the importance of learning what industry needs in its IT workers. New assignments and anecdotal material, gleaned from the job shadow experience, enabled faculty to enhance their curriculum across the board. Educators shared their experiences with colleagues as well, carrying the message of industry relevance back to their institutions. Educators made important contacts within the Boeing Company, thereby expanding their potential industry resources in a very personal way.

Boeing personnel reported that hosting WCIT educators gave them new focus and perspective on their work, and opportunities to interact within their larger group in new ways. They reported satisfaction in giving educators real world context for skills that are being taught. Being given the chance to potentially influence the way future workers are

educated was reported as a valuable experience for the IT professionals. Gaining an understanding of the approach and which skills are being taught (or not taught) to IT students today, was an important benefit of the program.

Next Steps

Plans are underway to move the aWeek@Boeing job shadow project beyond Boeing to aWeek@Industry and create job shadow opportunities addressing the application of IT across industry sectors. Issues surrounding this expansion primarily involve company recruitment, educator recruitment, and funding (largely administrative costs and participant stipends). Company recruitment will start with existing institution advisory boards and committees, as well as Workforce Education divisions, Worker Retraining and Career Center industry networks, and industry-education non-profit agencies (e.g., RATEC and INTEC in Washington State). Educator recruitment will be addressed by tapping partnerships with other colleges, inviting personnel invested in new IT applications programs such as Life Sciences Informatics, and other awarded Workforce Education grant projects. Possible funding sources will be explored through Professional Development grants, industry sponsorship, and institutional support for Professional Technical Certification.

Key Issue

Provide K-12 and community college faculty with industry experiences that significantly enhance their abilities to prepare students for the workplace.

Side Bar

Comments from a WCIT participant (2004):

Any personal experience in a discipline is a plus when teaching. This week at Boeing opened my eyes to the expanse of how large businesses do their daily work and how effective technology is a large part of the equation. Cooperation, teamwork, leadership, communication, cultural diversity, are a necessity as well as the skills to run particular applications are at the breadth of every situation.

Comments from a Boeing participant (2004):

I would participate again – yes. Hoping to help educational field be more real world and practical in educating people (especially considering they might be future Boeing employees or companies supporting Boeing in various endeavors)

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