
AC 2011-1709: ENHANCING THE STUDENT JOB SHADOW EXPERIENCE WITH INDUSTRY

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Enhancing the Student Job Shadow Experience with Industry Mentor Collaboration Using Web 2.0 Technology

Abstract

Using Web 2.0 technology provides many opportunities for the student to connect with industry professionals. Educators can utilize social media technology for classroom instruction and for student project opportunities. One school's faculty survey results about the potential use of social networking technology (SNT) encourage collaboration between students, 58% agreed or strongly agreed that SNT's could be effective for this purpose.^[1] Companies that participate with job shadow programs make their facility available to students to learn about a "day in the life" of a career mentor. The student prepares for the visit then spends the day with the mentor to experience the work environment. The process usually completes when the student writes a report and presents to the class about their experience. Given easier access to social media and networking technologies, students can start the shadow experience before the on-site scheduled day and even continue working with the mentor well after the final report is complete. This paper discusses the benefits using social media and networking tools to enhance the student's job shadow experience.

Introduction

In 2009, The Society of Manufacturing Engineers Education Foundation (SME-EF)^[2], with the National Center for Manufacturing Education (NCME) released a unique career exploration web portal focused on advanced manufacturing career exploration called CareerME.org.^[3] The website was designed for high school and college students to search and learn about careers, technologies, companies, industry professionals, and education opportunities. The goal was not to replace use of other career websites, or to be a primary author of the content about careers, but to identify and link to good resources across the internet so the student can find and explore about advanced manufacturing. Topics are organized by under five tabs to point to content about careers, education programs, companies/people, statistics, and resource links.

A Web 2.0 social networking application called mycareerme.org was next developed to extend career exploration through an "education-safe" social networking tool that offers an interactive option to connect with industry professionals. The mycareerme design goal was to build a platform that would enable students and teachers an option to collaborate with industry mentors by exchanging project deliverables, comments, pointer's to related web resources for learning. Similar to the Facebook and Linked In applications, the mycareerme.org users register and build a user profile. Users can create groups for project teams, comment on postings, and link to images, audio and video files, and other internet sites.^[5]

Each February, junior students that take the PLTW^[4] Principles of Engineering course at Kettering-Fairmont High School south of Dayton, Ohio participate in a job shadow class project to explore careers in engineering. This course exposes students to engineering and scientific concepts to solve engineering design problems. The lesson, "Definition and Types of Engineering", explores differences with engineering and engineering technology to familiarize

students with concepts using research, group discussion, and activities. At the conclusion of the learning module, students write a report about the interview and prepare a Power Point presentation to deliver to the class. Students in this class take it a step beyond the research by also visit a company to learn about an engineering professional through a job shadow experience.

Although all students in this class job shadowed industry mentors, four students made the commitment to participate in the careerme.org job shadow program using the social media applications. In preparation of the job shadow day, students learned about careerme.org templates and instruction sheets that helped them understand about the website components necessary for the homepage. Students also started dialog with the mentor through the social networking capabilities using mycareerme.org. They helped their mentor become an industry user member which opened up the “communication line” to also include the teacher. Ultimately, the students spent the day with their shadow mentor, took notes and pictures, and wrote the final report using careerme.org tools and guidance. The job shadow project experience by the students made for a challenging, yet fun journey to learn about careers.

Student Benefits Extended by Using Social Media Tools

The job shadow experience requires student effort for research, communication, and writing activities. A structured process with a checklist is a great way for teachers to guide the student prepare, shadow the mentor, then complete the report. High school students, more so than the college student, could require a higher level of teacher involvement through the complete process. The student’s main objective to participate in a job shadow program is to learn about a career. But many non-tangible benefits are gained from the student’s experience. For example, communication skills are practiced with their job shadow mentor before, during and after their shadow day. Recording notes from discussion with the mentor during the day and synthesizing into a final report practices writing skills. Teachers that use job shadowing as a class project can monitor student progress using interim deliverables to measure effort for the research, communication, and writing activities.

Career exploration websites, including the CareerME.org web portal are available to students to gather information and help prepare for their job shadow day. It became evident that with some minor functionality improvements, the site could offer student’s an opportunity to be an active contributor to the site as a result of their job shadow effort. As the student learns about the career through their job shadow experience, they will be able to share their results with other students through dissemination on CareerME.org. The second part of the equation is being able to use mycareerme.org to facilitate discussion and resource exchange during the shadow process with their teacher and job shadow mentor. This application offers the social media experience for communication. Expanding the experience by using CareerME.org brings a heightened purpose to the student’s involvement throughout the job shadow process.

Research: Gain confidence prior to the shadow day by preparing in advance.

Students can use the internet to find information about the shadow mentor’s company, about the career field they will experience, technology, other industry, for starters. Worksheet templates are provided for students to save their newly discovered data to start the reporting component of CareerME.org profiles.

Communicate: Ask questions with a purpose!

The job shadow day is all about learning. As the student completes their researches before the shadow day, questions will surface. During the shadow day, the mentor and student will both exchange information. The student should be asking questions from their preliminary research and as a part of the shadow day. The interview questionnaire worksheet for CareerME.org covers questions that are typically asked during the job shadow day, that any other student would want to read about. The project profile worksheet helps guide the student to ask the job shadow about a process they support or a specific project. Both student and mentor can electronically communicate through the complete process using mycareerme educational networking.

Listen: Hearing the response; synthesizing the information.

The student's experience during the job shadow day can be overwhelming! Given a day of communication exchange, the student will have learned a lot of facts from the mentor and other company associates. Students know that some aspects of the shadow day that will become part of their reports for the company and career profile posting, they will concentrate and listen attentively.

Interpret: Notes that are meaningful.

Capturing the job shadow's response on paper over the day can be very difficult for some students. Taking notes throughout the day is an important part of capturing facts that feed into the student's final report. Asking questions and listening to the responses then recording notes that can be interpreted after the day has completed takes practice. If the job mentor's company allow, tape recording the question responses is an excellent way to supplement notes. The CareerME.org project and career profile worksheets provide a place for students to keep their notes organized and help feed into the template used to publish onto the site.

Write: More readers than just my teacher!

The questions were asked, notes were taken, a full day of listening and learning from the job shadow mentor has completed. The end result of many student job shadow projects culminates in a written report to the teacher who in turn, grades and returns the report back to the student. Would the student's effort and quality improve knowing their mentor and peers will be reading what they write? Writing skill is an important characteristics employers look at when selecting and hiring students. The process to take the recorded notes, write the draft profile reports, get input from teachers and other students is an important part of the writing process. Awareness that the final report about their experience will be shared beyond the teacher can be a strong motivator to drive student effort toward "excellent" versus "just getting it done".

Display and Demonstrate: Other students see what you experienced.

Images that record what the job shadow does in their workplace opens the door for other students to experience. Student's attention is on the picture; if it is interesting, something different, before clicking to read about the story behind the picture. With the help of the mentor, the student has to put some thought into what image best captures the mentor and the mentor's career. They also practice communication skills for example, to discuss and to get approval to take pictures that can be posted on the CareerME.org site.

***Involve:** Being part of the “bigger picture”; sharing the experience with peers.*

Students that participate in the project to create a CareerME.org profile produce a product they can be proud to share.

Social Media Tools to Complement Job Shadow Process

From planning to the post-shadow reporting, many activities between the job shadow mentor, the teacher, and the student require collaboration and communication. The CareerME.org website provides a dedicated web page with job shadow worksheet templates, profile writing stage examples, and good website resource links for tips. Today’s students are very familiar with social media and networking tools for personal and classroom use. More companies than not, have an internet presence and continue to enhance their websites to inform and educate site visitors about their products, services, processes, jobs, and technology. Information available on their site helps the student learn and prepare for the shadow day.

General process steps that compliment the complete job shadow experience using CareerME.org and mycareerme.org are listed in Figure 1. The terminology that is distinctive to the mycareerme.org application is in bolded font. An explanation about these steps is organized by the CareerME.org career exploration website and the mycareerme.org educational networking website.

1. The instructor **finds** and **connects** with a company to be part of the job shadow program.
2. The company assigns job shadow mentors who **connect** with the professor to get more information about the job shadowing event.
3. The career mentor creates their professional member **profile** and is now available for the student to send a **connection request**.
4. The teacher announces the job shadow day **event** and post flyers or schedule details. All participants are encouraged to **connect** to the job shadow group and follow along leading up to and after the day.
5. The student researches about the company and the career and transforms their findings into a questionnaire document for CareerME.org. The student uploads the career question **resource file** to their job shadow **group** in advance of the shadow day for the mentor to view and be ready to answer.
6. The student **connects** to the job shadow mentor. The mentor can provide links to related technology resources, videos and other materials. The student continues to learn in advance.
7. During the shadow day, the student asks questions, learns, and takes notes for the post-job shadow day assignment. If pre-approved, the student takes a picture of the career mentor for the CareerME.org **homepage**.
8. Post-shadow day, the student uses a **profile** and a **project** template to write the report about their job shadow mentor and upload these deliverables as **resources** for the professor’s and mentor’s review comments.
9. Upon review approval, the student submits these deliverables plus the job shadow mentors picture to the CareerME.org website manager to create the **homepage** for the company’s location.

Figure 1. Bringing social media into the job shadow process

Companies that participate with the student can expect to spend more effort during the overall shadow process, primarily to make sure the final CareerME.org reports are accurate, complete and reflect facts about the organization as they would expect. The mycareerme application provides an electronic method to enable communication through the complete process without using E-mail. Although the job shadow's primary method to exchange communication would be through phone and E-mail, high school technology departments (IT) generally block student access to electronic communication or social networking applications during the school day.

The mycareerme.org educational social networking site enables resource exchange between teachers, the mentor and the student without using E-mail. The mycareerme.org tool is education-oriented so that schools systems can provide access by students during the day from their classroom PC's. Alternatively, some companies block employee access to social networking internet sites through the employers' computers. The user focus for mycareerme.org is between the student, their teacher, and the company representatives to accomplish an educational objective with the potential to hire a future employee.

CareerME.org job shadow process – publishing the career and the project profiles

The CareerME.org website offers students a final step in the overall job shadow experience; to publish their report about the job shadow mentor, company, and a project/process. Given the interest of the student, the CareerME.org website provides worksheet templates and writing process examples to help the student understand what is expected to be able to publish their work. The teacher is also an important link in the process, from explaining about the project components to the student, to reviewing the final work product before submission to the website administrator. This can be a fun project for high school students to tackle, but will require a higher degree of effort than would normally be expected for a "final report".

The following process steps briefly describes the effort to complete job shadow activity starting with planning the effort, to participating in the shadow day, then culminating with "going live" for the profile components on the CareerME.org website. All efforts involved to accomplish these steps involve on-going collaboration between the student and teacher, and the student and job shadow mentor.

Step 1. Job Shadow Commitment

The student will be submitting multiple components about the job shadow mentor and their company to the website administrator. The company can participate at the student's state or regional "Homepage" level to display the job shadow's career and project profile descriptions. The description is comparable to a traditional final report, but includes questions about the job shadow mentor's career. Having the commitment up front from the job shadow and the company to participate as a career profile should always be requested.

Step 2. Research and Prepare for the Job Shadow Day

CareerME.org worksheet questionnaires can be completed in advance of the job shadow visit by gathering information about the company that is already publicly available to anyone browsing the internet. Many organizations provide general information about their company on the "About" page. As the student prepares for the job shadow day to learn more about the company, technology or types of jobs for example, this information can be copy/pasted from the website

into worksheet templates. Data that is publicly available from a company's website usually offers most information the CareerME.org questionnaire worksheet requires to be posted. The job shadow mentor supplements missing information to the student during the shadow day. Using a questionnaire template helps high school students make sure they cover questions that another student would be interested to read. The student could also provide the questions to the job shadow mentor in advance, so the mentor can think about and provide a more robust response during discussion throughout the shadow day.

Step 3. Job Shadow Day

The CareerME.org homepage profile uses five main components to describe about the job shadow mentor. The student has the opportunity to apply photography skills to this project, taking the "full view" photograph of the mentor, and taking "on the job" photographs to represent what the mentor supports in their job. The student does not have to be a photographic expert and a standard quality digital camera is usually adequate to take a good quality image for the homepage. This component could require some advance practice if the student is concerned about their skill level. Images from the company website are also good sources. The other homepage graphical components include the company logo image and the job mentor's signature. The student will be taking notes during the day about the job shadow's their career, responsibilities, technology used plus asking questions from the worksheets. The student would ask the mentor about a project they have worked on or currently support. This is a great way to show a hands-on application of the mentor's responsibilities.

Step 4. Follow Up to the Job Shadow Day to "Go Live"

At the completion of the job shadow day, the student will "walk away" with excellent information that can be shared with other students through CareerME.org posting to their state or region's homepage. This is also one of the more difficult activities for many students during the complete shadow experience. Did the student take enough notes and are they robust enough to complete the written report profile about the job shadow mentor. Tape recorded answers to the profile questions can be very valuable if the student's hand written notes are not as complete as they would have liked. To help the student with the writing process, examples show what the report first looks like when transferring the hand written notes into a Word document. Another example shows how these transferred notes then become a completed document. It's always helpful to compare what is expected in the final profile report so that the student has a benchmark or standard to achieve. Both the teacher and the job shadow mentor are encouraged to stay involved during this writing process. The student should be able to consult with the job shadow mentor to make sure their report is accurate and comprehensive compared to the interview. Ultimately, when the teacher and student are satisfied with the written profile reports they submit to the CareerME.org website administrator, who prepares the components for website publishing. The CareerME.org job shadow program worksheets, templates and examples are accessible from the site and are created to guild the student, with their teacher and mentor, through important steps to be able to share their experience with other students around the country.

Mycareerme Job Shadow Collaboration – Student and Industry Mentor Experience

The student starts the communication and collaboration process when they (or their teacher) ask the job shadow mentor to participate as a career profile to the very end of the process to publish

the website components. The mycareerme.org tool is a great way to help facilitate resource sharing and communication between the teacher, the job shadow mentor, and student. The tool has similar functionality concepts like popular social networking websites, but is oriented to meet the needs in the education community.

The Figure 1 process steps highlight how mycareerme as an educational social media tool can be used throughout the job shadow experience. The tool provides an environment to exchange documents, point to good research resources, or post topics for discussion. The student starts the shadow process in advance of the shadow day to work with their mentor and start learning.

One characteristic of the mycareerme tool that is different than popular social networking tools is that the complete shadow collaboration is truly “private”. The student creates a “Group”, the teacher and job shadow mentor join the Group, then all are able to communicate and exchange deliverables by adding resources and commenting. The tool specifically does not have E-mail or chat capabilities since these activities are generally blocked from use in the classroom by school districts.

Conclusion

Students have an opportunity to be an active contributor to the advanced manufacturing career exploration website CareerME.org. Given template worksheets for the process and guidance by the teacher, students will know what components they should create to be able to submit to the website administrator. Their work lives beyond the final report; published for other students to view. Social media and networking tools extend the student, teacher and the job shadow mentor’s involvement over the job shadow process.

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