The New Resource File

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The development of the resource file is a common experience in teacher preparation programs. The author examines strategies for transforming what has been a project composed of physical resources to one emphasizing digital resources. Methods for finding, tagging, storing and retrieving resources are explored.

Introduction

Teacher educators have historically required the creation of a resource file by their pre-service teachers and it continues to be a part of the educational process on many college and university campuses. Before computers and the Internet the resource file was a collection of activities, articles, ideas, images and any other documents that might be useful for a teacher starting in the profession. They were often graded at some point where the collection was evaluated for quantity and quality of materials. Different classes required different resources. Many of us remember the hours spent in libraries and learning resource centers copying and organizing material for this project. A portion of those resources made it into my teaching so, for me, the activity was useful though limited by the time spent in physically finding and constructing the file. The purpose of this article is to examine how the resource file has, or should be changing from a physical box to an electronic resource used for locating, storing and sharing resources.

While my "box based" resource file did prove to be of limited value, students find it difficult to allocate time to gathering resources for the sake of gathering. Emphasis must be placed on finding, evaluating, organizing and sharing resources that will be useful when beginning teaching. These resources should be easy to use, accessible anywhere from any type of electronic device be it computer, netbook, smartphone or tablet computer regardless of their operating system. Previously, pre-service teachers found and copied resources then filed them away to keep them. Digital materials, often found on the Internet must also be found, but once found the only requirement is that one records its location and catalogs it for future use. If it is an article and one wants to be safe the file might be downloaded and stored locally. This article will focus on locating and cataloging Internet based resources.

Finding Resources

Finding resources is a key skill for all teachers. Where once teacher candidates spent time researching library card catalogs, journal indexes and microfiche, they now must know how to search the web. Specific tools and locations aid in this search. Three means of finding resources present themselves.

Search Engines

Search engines provide access to teacher resources as well as primary sources. Both pre-service and in-service teachers should have a clear strategy for performing effective web searches. While some search locations such as Google (http://www.google.com) and bing (http://www.bing.com) are general web searches, others are tied to sites dealing specifically with education. Education World (http://www.edu-

cationworld.com/) and ProTeacher (http://www.proteacher.net/) are examples of sites with teacher materials with search capabilities. Special search engines can be used to search for specific types of media. For example, Google Blog Search (http://blogsearch.google.com/) or Technorati (http://technorati.com/) search for blogs or blog articles, Podcast Alley (http://www.podcastalley.com/) and Apple's iTunes podcast area provide search of podcasts, Google Image Search (http://www.google.com/imghp?hl=en&tab=wi) searches for images and The Freesound Project (http://www.freesound.org/index.php) for sounds.

Regardless what is found, pre-service teachers must be aware of issues concerning copyright and use of found materials. Finding resources on the web does not mean it is legal for teachers to use them. Creative Commons (http://www.creativecommons.org) provides not only information on copyright and use of copyrighted materials but also provides a good search engine where teachers can limit their searches to resources legally usable in the classroom.

Education Websites

There are websites designed specifically to provide teachers information and resources such as lesson plans, worksheets, rubrics for assessment and activities. These sites may be designed to support a particular publisher's text or program such as Houghton Mifflin's Education Place (http://www.eduplace.com/) or Discovery Education's free teacher resource center (http://www.discoveryeducation.com/teachers/). The U.S. government supports many education sites. Examples include Federal Resources for Education Excellence (http://free.ed.gov/), NASA Education (http://www.nasa.gov/offices/education/about/index.html) and the Treasury Department's education site (http://www.treasury.gov/about/education/Pages/default.aspx). State governments also have websites directly related to education and are often valuable because of materials related to state standards and testing.

In addition there are teacher portals, specific starting places for teachers in search of resources. Examples include Sites for Teachers (http://www.sitesforteachers.com/) and TeAch-nology (http://www.teach-nology.com/). These sites may be maintained by individuals, districts, state departments or vendors and are meant to be starting points for teachers searching for resources. The Verizon Corporation maintains an exceptional site called Thinkfinity (http://www.thinkfinity.org/). This site index resources from several subject specific organizations such as National Geographic (http://www.nationalgeographic.com/), National Council of Teachers of Mathematics (http://nctm.org/), and the National Council of Teachers of English (http://www.ncte.org). Many of these sites are divided into topic areas and provide search capabilities. As a bonus, some relate resources to specific state standards.

Other sites provide access to specific types of media. Teacher Tube (http://www.teachertube.com/) provides access to video, audio, documents and images as well as teacher resources on a broad range of topics and provides a search engine for finding them. YouTube has an education "channel" (http://www.youtube.com/education?b=400) and between YouTube (http://www.youtube.com) and Vimeo (http://www.vimeo.com) there are thousands of videos that may be appropriate in education. Project Gutenberg (http://www.gutenberg.org/wiki/Main_Page) has over 33,000 free ebooks, LibriVox (http://librivox.org/) catalogs over 3000 audio books. iTunes (http://www.apple.com/itunes/) lists podcasts by educators and educational leaders and iTunes U has free podcasts developed by educators at many of the top universities in the world. Nearly any resource from maps (University of Texas Perry-Castañeda Library Map Collection - http://www.lib.utexas.edu/maps/map_sites/map_sites.html) to music (Grooveshark – http://www.grooveshark.com) is available online.

Blogs

Some of the best resources are found on blogs. There are thousands of blogs kept by educators on subjects ranging from personal ramblings to shared ideas and tested resources. They can be found at sites indexed by discipline such as Moving Forward's Education Blog by Discipline (http://movingforward.wikispaces.com/Education+Blogs+by+Discipline) or by topic as found at Top 200 Education Blogs (http://www.guidetoonlineschools.com/tips-and-tools/top-education-blogs). Google's Blog search (http://blogsearch.google.com/) returned over 8,000,000 hits on the search "education". However, adding a topic or curriculum area the number of hits is dramatically decreases. This supports my previously stated need to teach pre-service teacher candidates how to do effective web searches. In most search engines the site hit most often is listed first based on the assumption the most hit site is probably the best. (This is a simplistic view of the workings of a search engine but will serve here.) Teacher candidates should learn to find blogs related to their area of teaching or interests.

Keeping current with blogs can be difficult. Checking back regularly to find if a new posting has been made and to read those postings can be time consuming. To make this process more efficient most blogs provide an RSS feed. RSS feeds are synopsis or indexes of the blog site. When a site changes the new material is published and can be read by RSS readers such as Google Reader (http://www.google.com/reader/). These readers allow a person to scan numerous blogs at once looking for information they consider important then going to that information with a single click.

Evaluation

Determining if an activity or resource is useful is the most difficult problem facing pre-service teachers as they acquire resources. They lack the experience necessary to determine if an activity or resource fits their student's needs or their comfort level with using a specific type of resource. Experienced teachers can look at a resource and immediately have a feel for its value to them and their students. This ability can come only from years of experience in the classroom.

Professor can help students in evaluating materials by providing guidelines and examples throughout the curriculum and the selection and creation of good learning resources should be integral to any teacher preparation program. The British Columbia Ministry of Education's document, Evaluating, selecting, and managing learning resources: A guide (2002) (http://www.bced.gov.bc.ca/irp/resdocs/esm_guide.pdf), identifies the four categories of content, instructional design, technical design and social considerations for resource evaluation. Each area is important and should be taken into consideration in evaluating any resource.

Evaluation of the website where material is found can aid in determining the quality of the resource, especially in the area of expertise and/or bias. In "Teaching undergrads WEB evaluation: A guide for library instruction" Kapoun (1998) provides a simple, five-strand approach to evaluating any website. The strands are accuracy, authority, objectivity, currency and coverage. Learning how to evaluate each will help teacher candidates to evaluate a website and, if a website is inaccurate, biased or not current, require the pre-service teacher to question the value of the resources found there.

Sites that may be most helpful are those sites that list resources submitted by teachers. One can assume no one would knowingly submit an unsuccessful resource or activity. Sites that list teacher submitted resources include Teachers.net (http://teachers.net/) and Lessonplanet (http://www.lessonplanet.com/).

Organization

When building my physical resource file my first concern was finding a box appropriate for holding the materials. It had to be large enough for manila folders and strong enough to be transported from library to learning resource center to class. Plastic milk carton carrying boxes were the box of choice but difficult to find so I purchased a filing box and taped the corners for additional support. Electronic resources do not require a box but they still require some means of filing and organization for later access. The ideal storage would be easy to access, add resources to and organize. It must also be able to be shared. Two types of electronic resource organization and storage is available, those that rely on tagging and those that store resources in categorized areas.

The tagging process occurs when an internet resource is found and stored. Once a resource is found the user saves the location and assigns a tag or tags to the resource. For example, if one finds an internet site that provides drill on multiplication it might be tagged as "math", "multiplication", "drill" or all three. Later, when the teacher needs a multiplication resource they can search for the "multiplication" tag and all those resources associated with multiplication appear. If they need a resource specifically for drill on multiplication they would search for a combination of "multiplication" and "drill" and any resources tagged with those identifying tags would be returned. In this means the teacher's resources are organized for retrieval. Two services, Diigo (http://www.diigo.com) and Delicious (http://www.delicious.com) use this technique.

Another solution, one at least metaphorically closer to the physical resource box, is to organize resource locations by topic. The simplest example would be browser bookmarks organized into topical folders. A better solution is LiveBinders (http://www.livebinders.com). LiveBinders can be compared to three-ring binders. Resources that you find can be stored in binders you create. Each binder can have a subject and within binders divisions can be made. For example, a Math binder can be created with divisions for addition, multiplication, subtraction, and division. When a resource is found related to multiplication it can be filed in the Math binder under multiplication. As math resources are found they can be filed in the binder in the appropriate category. One resource might actually be filed in multiple categories or binders.

Both types of organization offer ease of use. Both have bookmarklets that allow you tag or file your resource from the resource page. Both also offer the ability to share your resources with students or other teachers.

Sharing

Research by Rothberg (1984) indicated over 80% of teachers viewed the classroom as an isolated world populated by themselves and their students. Driscoll (1983) identified isolation as one of the inhibiting characteristics of the teaching profession. Recently the concept of a personal learning network (PLN) has appeared in the literature. Teachers have used PLNs since the time the first two teachers sat together in the first teacher's lounge and exchanged ideas on how best to make their students understand. Warlick (2009) states

> Personal learning networks (PLNs) are not new. We have long relied on our families, friends, colleagues, and acquaintances to supplement our knowledge about the world. Our professional learning also comes from reference books, the textbooks we carried home from college, the television and radio stations we tune in to, and the professional and personal-interest periodicals to which we subscribe. (p. 1)

But personal learning networks have gone digital. PLNs now include blogs, file sharing, bookmark sharing, wikis and other means of communication. The hub of the PLN is often an

RSS reader or aggregator such as Google Reader (http://www.google.com/reader/) or Pageflakes (http://www.pageflakes.com/). These keep us automatically connected to content sources we see as valuable and allow us to skim for resources investigating only those we feel pertinent to our needs. They also connect us to other teachers and their ideas through those teachers' blogs.

An individual's PLN can also include participation in social networking sites such as The Educator's PLN (http://edupln.ning.com/) or Classroom 2.0 (http://www.classroom20.com/) and social bookmarking sites like the aforementioned Diigo (http://www.diigo.com) and Delicious (http://www.delicious.com). They may also include communication tools such as Skype (http://www.skype.com) or instant messaging systems such as Google Talk (http://www.google.com/talk/).

PLNs are ideally reciprocal. A PLN should be both a means of gathering and sharing information. Fully developed they are both content driven and social. Teachers can share by publishing blogs, participating in shared bookmark groups or membership in relevant social networks.

How can students begin to build a PLN? Nielson (2008) lists five steps in developing a PLN.

1. Join a professional social network.
2. Pick five blogs and start reading them regularly.
3. Set up a RSS reader and subscribe to the five blogs.
4. Begin contributing by commenting in the blogs.
5. Join a micro-blogging site such as Twitter and begin following five educational microbloggers. The Wefollow Education (http://wefollow.com/twitter/education) site has a large list of individuals, organization and companies that can be followed on Twitter.

In addition I suggest:

1. Join Diigo and follow a group related to education. Find groups at http://groups.diigo.com/index
2. Create a student blog and make regular entries. These entries might deal with comments on successful activities or ideas from classes they found interesting, listings of useful websites or discussion on current issues in education.
3. Establish RSS links to at least five other student's blogs.

Conclusion

The new resource file requires pre-service teachers to have skills that we, as professors, did not have to learn, but are important for our students. What can we do to help them?

1. Learn to use these skills ourselves. By modeling these skills in our instruction we will provide student examples for their use.
2. Accept what is too often unacceptable and realize sharing resources is a good thing. Collaboration is necessary and too often honest collaboration is viewed as cheating or being lazy when resources are shared.
3. This requires new approaches to evaluation of resource files. What skills and links the person has allowing them to access, evaluate, organize and share materials is far more important than the quantity of store materials.

The internet provides access to the largest body of resources in man's history. It is this author's intent to encourage pre-service teacher educators to provide basic skills in the areas of finding, evaluating and storing or cataloging resources helpful to teachers in a digital age and to encourage the sharing of ideas and resources in order to build levels of cooperation and collaboration that may help in retaining individuals in a difficult profession.

References

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Appendix

Listed Web Locations

- Bing - http://www.bing.com
- Creative Commons - http://www.creativecommons.org
- Delicious - http://www.delicious.com
- Diigo - http://www.diigo.com
- Discovery Education - http://www.discoveryeducation.com/teachers/
- Classroom 2.0 - http://www.classroom20.com/
- Education Place - http://www.eduplace.com/
- Education World - http://www.educationworld.com/
- Educator's PLN - http://edupln.ning.com/
- The Freesound Project - http://www.freesound.org/index.php
- Google – http://www.google.com
- Google Blog Search - http://blogsearch.google.com/
- Google Image Search - http://www.google.com/imghp?hl=en&tab=wi
- Google Reader - http://www.google.com/reader/
- Google Talk - http://www.google.com/talk/
- Grooveshark – http://www.grooveshark.com
- Guide to Online Schools Top 200 Education Blogs - http://www.guidetoonlineschools.com/tips-and-tools/top-education-blogs
- iGoogle - http://www.google.com/ig
- iTunes - http://www.apple.com/itunes/
- Lessonplanet - http://www.lessonplanet.com
- LibriVox - http://librivox.org/
- LiveBinders - http://www.livebinders.com
- Moving Forward, Education by Discipline - http://movingforward.wikispaces.com/Education+Blogs+by+Discipline
- NASA Education - http://www.nasa.gov/offices/education/about/index.html
- National Council of Teachers of English - http://www.ncte.org
- National Council of Teachers of Mathematics - http://nctm.org/
- National Geographic - http://www.nationalgeographic.com/
- Pageflakes - http://www.pageflakes.com
- Podcast Alley - http://www.podcastalley.com/
- Project Gutenberg - http://www.gutenberg.org/wiki/Main_Page
- ProTeacher - http://www.proteacher.net/
- Sites for Teachers - http://www.sitesforteachers.com/
- Skype - http://www.skype.com
- TeacherTube - http://www.teachertube.com/
- TeAch-nology - http://www.teach-nology.com/
- Teachers.net - http://www.teachers.net
- Technorati - http://technorati.com/
- Thinkfinity - http://www.thinkfinity.org/
- U.S. Treasury Department - http://www.treasury.gov/about/education/Pages/default.aspx

- Univ. of Texas Perry-Castañeda Library Map Collection - http://www.lib.utexas.edu/maps/map_sites/map_sites.html)
- Vimeo - http://www.vimeo.com
- Wefollow Education - http://wefollow.com/twitter/education
- YouTube - http://www.youtube.com
- YouTube Education Channel - http://www.youtube.com/education?b=400

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