Copyright and Patent Education: Promoting Student Success by Developing Lifelong Skills

Razzaghi, Farzaneh [1]; García, Janette [2] and Leu, Kelly [3]

[1, 2, 3] University of Texas, Pan American

Abstract

Intellectual property issues are increasingly important in today's technology oriented society. These issues have significant relevance to the academic community, but are not usually taught to students on a broad or systematic basis. As a result, students are often unfamiliar intellectual property topics such as copyright and patents resulting in a knowledge gap. This paper describes our experiences with developing and implementing an online workshop that teaches copyright and patent basics to students, a project that can be considered a best practice for a number of reasons. Given the success experienced by two institutions which both successfully implemented this program, we believe that it can be adopted by other institutions.

Introduction

In February 2009, The University of Texas Pan American University Library (UTPA) was invited by the Michigan Technology University Library (MTU) to partner with them on a proposal for an Ethics Education in Science & Engineering NSF grant, called *Ethics Education 2.0.* This grant emphasized the significant need for students in the STEM disciplines to understand intellectual property rights and how this relates to responsible conduct of research when using the work of others in their own research. Ethical use of intellectual property is

growing in importance, yet students are often not as familiar with these issues as they should be.
In addition, there are few opportunities for students to receive training on this topic in their
normal coursework. The main objective of the NSF grant project was to develop and test a
replicable and sustainable, online program to educate STEM graduate students about intellectual
property, specifically copyright and patents.

UTPA was selected as a partner by MTU because we had everything that was required to
implement the grant proposal including a strong graduate science and engineering program
(STEM), an intellectual property office, and a high-quality library that includes a Copyright
Librarian on staff. UTPA, a midsized institution with approximately 20,000 students, has been
recognized as the best Hispanic Serving Institution in the United States by the National Hispanic
Institute. Over 90% of our student population is Hispanic, 68% are first generation, and 93%
live in the surrounding four counties. Located near the Mexican border, UTPA is an integral part
of a bilingual, bicultural community. The University Library holdings include close to a million
items, including books, journals and electronic databases. Services offered include one-on-one
information consultations, group instruction, and virtual reference via chat, texting and email.
On average the library see about 2,000 visitors each day.

MTU completed the initial design and testing of a system to deliver online instruction
using Web 2.0 technologies and UTPA tested the replicability and sustainability of this model.
The result of the grant, which was completed in 2012, was a twelve week course on copyright
and patents which was offered on a no-credit, no-cost basis. Both institutions have continued to
offer and refine the workshop after the completion of the official grant as a result of ongoing
interest from the campus community. The resulting workshop presents a unique opportunity to

develop practical skills and knowledge that contributes to students' academic and professional success. The success of the intellectual property program on both campuses demonstrates the viability of duplicating this program at other campuses. This paper will describe UTPA's experiences with the program and why we believe this program is a best practice.

Why Intellectual Property?

Ethical use of information has always been an important issue in academia and is considered a core competency for information literacy for all students. In fact, the Association for College and Research Libraries' Information Literacy Competency Standards for Higher Education and for Science and Engineering/Technology, specifically refer to legal and ethical issues related to plagiarism, copyright, and patent law. An understanding of patent literature and patent searching skills are particularly necessary for science and technology students as they engage in research projects. (Association of College and Research Libraries, 2000; ALA/ACRL/STS Task Force on Information Literacy for Science and Technology, 2006)

The way we access, share, and communicate information has changed significantly with the development of new technologies which facilitates these activities. The rise of the "remix culture" which encourages the sharing and reuse of information means that students are becoming accustomed to habits which could inadvertently expose them to infringement (Koman, 2005). In fact, encountering intellectual property issues in the course of daily work is practically inevitable for most of us. For example, digital technology has made the copying of a picture from a website and sharing it with others by posting it in a blog or on Facebook virtually effortless.

Unfortunately, student awareness of these topics is vague and intellectual property concepts are often confused. While plagiarism receives a lot of attention in educational programs, opportunities for students to learn about copyright and patent law are not as readily available. For example, at UTPA students can learn about plagiarism from their professors, via an online tutorial available from the Library's website, by attending an on campus study skills workshop, or via a library information literacy lesson given during class. Students might also be able to receive instruction on copyright during a specific course if instructors request that the Copyright Librarian provide a one-hour presentation on copyright and fair use. Patent law may be addressed by an instructor as a unit in a specific course. Beyond this, there are no independent workshops or courses dedicated to copyright or patents that are open to anyone regardless of discipline or course enrollment. A dedicated workshop series of this type represents a unique opportunity for students, to gain a more in-depth look into the issues surrounding both copyright and patent law outside their regular coursework. Because it is open to all students, anyone with an interest may have the opportunity to participate making this is a unique opportunity that, as one student pointed out it, "would be difficult to obtain … [and] harder to grasp … on one's own." (A. M. Garcia, personal communication, November 29, 2011.)

Learning Outcomes

The goal of the series is to provide students with basic theoretical knowledge about copyright and patent law as well as practical skills that will allow them to successfully navigate these issues when engaged in research and scholarship. Students who successfully complete

this series should be able to accurately distinguish between plagiarism, copyright, and patents. They should also be able to identify specific owner's rights as well as what copyright or patent law actually protects, and discuss the various limitations that the law places on these rights. Practical skills that students gain include the ability to determine whether a work is protected by copyright or patent law, how to identify inventors, and how to locate a copyright owner. They also gain a better understanding about what their obligations are when they need to use a protected work (The University of Texas Pan American University Library, 2014). For example, students learn how to apply the fair use exception in an assignment, and then are expected to accurately apply it as part of their final challenge. They are also expected to know when asking for permission to use copyrighted or patented material might be the most appropriate option.

Course structure

Each module is divided into four one-week units for instruction, concluded by a fifth week in which students complete a final challenge assignment. At the beginning of each week online readings are made available through Blackboard. Questions about the readings are asked in a discussion forum, and students are given deadlines to respond to the questions. A quiz is due at the end of each week and an online chat session is held to discuss the topics studied during the week. The discussion questions and chats comprise the bulk of the grade and are evaluated based on participation and understanding. Points are also awarded for including citations, and for meeting deadlines, this as an incentive to maintain momentum and consistent participation throughout course.

The discussion forum allows students to develop their understanding of concepts. Starting with a student's initial response to a question, instructors provide input encouraging

students to explore topics in more detail, and provide specific examples to illustrate their understanding of the topic. Encouraging the students to go beyond the general, "textbook" definitions is helpful with identifying key areas of misunderstanding. Live chat sessions are used to follow-up with any lingering questions or misunderstandings. Instructor feedback and mediation during the discussion forums and chat session is a particularly important part of the class, especially in the absence of a traditional lecture component. This helps to provide clarification and prevent the development and spread of misunderstandings among the participants. The final challenge, assigned during the final week, presents the students with a hypothetical situation concerning infringement, and requires that the students draw upon what they had learned over the previous four weeks. Challenge responses are expected to include a review of copyright or patent rights, and to evaluate whether or not the hypothetical situation really infringed on those rights.

Pre- and Post-Tests are conducted with blind grading to determine how well the participants understanding of copyright and patents improved upon completion of the workshop. These tests confirmed what was observed throughout the class, that at the end of the workshop participants had a much more informed understanding of copyright and patents than before they started.

Course Content

When the course was being developed, the designers chose to utilize freely accessible online sources with the intention of increasing the transferability of this workshop to other institutions. Using freely available material did present some challenges, both in quality of the source and suitability of the material for our audience. This is a significant concern since the

course is not lecture-based and the assigned readings are the main source of exposure that

students will get to the concepts. In some instances, we found it necessary to select from the

library's materials, such as journals and encyclopedias, for more suitable material.

Accuracy of the content is a primary concern, especially when accessing free resources

on the Internet. While there are several good websites available, there are many others with

inaccurate and misleading information. For example, one of our students cited a questionable

website that was not part of an assigned reading. This particular site was problematic due to the

inaccuracy of the information provided. Most significantly, the site discussed plagiarism and

copyright interchangeably furthering common misconceptions that result from confusing these

two concepts. [1] We quickly pointed out the issues with this source in the discussion forum and

this experience served as an important lesson to the students about quality of information found

on the Internet (Turnitin, 2005). Inaccuracies in websites can sometimes be much more subtle

than the preceding example. Most of the information presented might be accurate and complete

with the exception of a single statement or two that are incorrect or outdated. When using

freely accessible material from the Internet it is always important to carefully review sources

for accuracy and quality.

Student comprehension

We noticed that the students' comprehension of the subject matter could be problematic

as unfamiliar legal and technical language can present a barrier to understanding the topics.

Addressing abstract concepts was particularly challenging since finding sources that explain

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[1] The student used this website to support his assertion that one can be sued for plagiarism. This is not an accurate assumption, since plagiarism is not governed by copyright law but is rather an ethical norm that is a part of academic culture.

these concepts adequately can be difficult. Some sources might do a very good job addressing a

concept, but are addressed to an expert audience using discipline specific language that makes it

difficult for novices to understand. Other sources may do a better job of presenting the topic in

layman's terms, but only provide a vague definition that is not detailed enough to help the

students understand how the concept plays out in the real world. [2]

In general, reliable sources of copyright information directed to the non-expert are readily

available on the Internet. For example, sources like Stanford University's Copyright & Fair

Use (2014) website and Columbia University's Copyright Advisory Office (2014, January 15)

are particularly helpful with making the subject matter more accessible to students.   Both of

these sites provide very good plain language explanations for the various aspects of the

copyright law. This was not the case for patents where much of the material was focused on an

expert audience. Finally, some websites that did provide some good plain language

explanations on patent law were commercial sites that were marketing patent services, and from

an ethical standpoint we were uncertain about appearing to promote one service over another by

sending students to these sites.

Student difficulty with the reading content was revealed during the discussion forum,

quizzes, and live chat sessions. Instructors noticed that while students could often repeat basic

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[2] Discussing the difference between transformative and derivative works is often very difficult as
the concept is very abstract. The copyright law provides a definition for derivative works, but
there is no official legal definition for transformative works. Instead, transformativeness is
defined on a case by case basis and is based on interpretations made by the courts in copyright
infringement cases. Concepts that are open to this type of interpretation are often very difficult
to explain without relying on court opinions, which of course, rely on understanding legal
phraseology.

definitions of concepts accurately, they sometimes had difficulty providing examples and expressing concepts in their own words. Students also often start out the workshop with misconceptions about copyright or patents. They might ask about "copyrighting" mechanical devices during the Copyright and Fair Use session or confuse copyright and plagiarism. [3] Conversely, during a Patent Basics class, a student asked about patenting a song. In anticipation of some common misconceptions and confusion, we assign readings during the first week that addressed those most commonly confused topics.

Some topics and assumptions dominate even when the proposed question does not really relate to a topic. This is particularly true for concepts like fair use or the belief that having a patent granted will result in making a lot of money. For example, we often find that discussions about copyright ownership, descriptions of specific rights, and copyright duration, can be overshadowed by student concerns about fair use. Likewise, questions and concerns about how to patent one's own work dominate early in the patent session. In fact, it is fairly common for students to enter the workshop from the perspective of personal ownership, students want to know how to protect their own work. While we address these questions as they arise, the workshop focus is from the perspective of the researcher's responsibilities when using the work of others.

Tools

The goal of the NSF grant was to use Web 2.0 technologies to take advantage of online collaboration and flexibility. Each institution worked with their distance learning departments to

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[3] One common confusion is that citing a quoted source will protect oneself from committing infringement, however citing sources only helps one avoid plagiarism.

employ technological tools and platforms already in use at their institutions. Initial planning

called for the use of RSS feeds, chats, blogs, wikis, and document sharing software to facilitate

asynchronous and synchronous delivery. In fact, different tools were used on each campus

throughout the course of the testing and development of the workshop which demonstrates how

easily the workshop can be modified to suit the needs of various institutions.

At UTPA Blackboard 8.0 was used the first year in 2011, and Blackboard 9.0 in 2012 for

course delivery. UTPA has since refined the use of tools to include Blackboard's discussion

boards, chat, and test functions. Wikis were used the first year at UTPA, however it was

determined that there was generally very unequal participation. Some students completed an

overwhelming amount of the work in the wikis while others contributed very little, yet each

student had to be individually graded. Discussion boards have replaced wikis at UTPA.

Questions relating to each week's topics are established as threads, and students are given

deadlines to answer the questions. Discussion boards allow students time to formulate their

thoughts and responses. Chat sessions allow the instructors to review that week's topics, lead

synchronous discussions, and provide students with an easy way to ask any remaining questions.

Quizzes are another method to determine whether the students understand the topics. Standard

email and the use of Blackboard's RSS-like functions to push announcements and feedback to

students are also important for course communication and maintaining momentum and student

interest.

Student Participation

MTU and UTPA have many similarities in student participation. Both institutions have

strong STEM graduate programs, and a significant student population for whom English is not

the dominant language. The grant was initially written in order to test how using web 2.0

technologies will help assist in teaching complex intellectual property topics under those

conditions. Variations in course design, however, evolved because of other differences in student

culture. As a largely residential campus, MTU found that their students requested more face-to-

face interaction. At UTPA, which is a largely commuter campus in which many students also

work, students preferred fewer face-to-face meetings, and more online interactions which they

could complete at work or at home.

MTU had designed the workshop for graduate STEM students. The first semester the

workshop was offered at UTPA we advertised for graduate STEM students, but immediately had

requests from undergraduates and non-STEM students to participate. As a result, the workshop

was opened to all students.   Based on further demand, we have since opened the workshop to

anyone associated with the university, including faculty and staff. People have indicated

different motivations for participating. Because this is an extended workshop requiring an

average of 3 to 4 hours per week, motivation is one of the keys to success. One of the most

common reasons participants enrolled was for personal interest. Some of the participants were

creators, authors, or inventors, and wanted to learn more about how to protect their creations. We

made sure that this workshop was designed to not only provide information on how to protect

your own intellectual property, but how you should properly and legally use others creations.

Another common motivation was for occupational reasons, for example, they were pre-law, or

were interested in working for the patent office, or just wanted to learn more about copyright and

patents. We have found that because of varying demands on student's time it is very helpful to

have the support of faculty. We have had several students who would sign up for the workshop,

get busy with their other classes, and drop, only to sign up again. In a sense, our workshop may

be compared to MOOCS (Massive Open Online Courses). Even though it isn't available to the whole web community, the motivations for people who sign up are similar to MOOCS participants. Some participants are "committed learners" and others are simply "browsers," people who are interesting in seeing what the class is all about but who do not follow through by actively participating (Koller, Ng, Do, & Chen, 2013). Also, like MOOCS, we have faced attrition (Rayyan, Seaton, Belcher, Pritchard, & Chuang, 2013) which, according to the student feedback we received, occurs when the time and effort to complete the workshop conflicts with other personal obligations[4].

Conclusion

This workshop series on copyright and patents can be considered a best practice for a number of reasons. This workshop series helps fill a knowledge gap by providing students with an opportunity to study patent and copyright in detail. Participant feedback has been overwhelmingly positive both during the workshop and in response to our requests for feedback after course completion. Although retention and follow-through by registrants present challenges, participants who do complete the workshop show a dramatic increase in understanding of the topics. The online format and use of Web 2.0 technologies for course delivery provided students with the flexibility to work around demanding schedules of classes, work, and other obligations making the workshop more convenient than if they had to travel to a physical class. In addition, with the use of resources already in use by the University such as technological platforms, like Blackboard, Library subscription databases, and openly accessible Internet resources, the workshop did not present a significant financial investment beyond staff

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[4] When students drop, the most frequent reason given is that they are too busy to take on work in addition to their credit-based coursework. Many of these students request to be notified the next time the course is offered.

time required for instruction.   This project has proven to be replicable by being implemented successfully on two different campuses and operated by different staff. Both MTU and UTPA continue to offer the program on their respective campuses, revised and refined according to each institution's unique needs. As a result, we are now able to offer an adaptable model to provide basic introductions to these topics. Given the success experienced by MTU and UTPA we believe that this program can successfully be adopted by other institutions.

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