

Cultural Issues Relating to Teaching IT Professional Ethics Online: Lessons Learned

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Abstract. Over the last few years the number of fee paying international students attending Australian Universities has increased dramatically. However with the increasing number of international students enrolling in Tertiary education, awareness of their different learning styles has become apparent. Therefore the current way in which unit information is presented to students is no longer ideal and procedures are needed to be reviewed in order to keep up with the changing audience.

1 Introduction

In recent years there has been an increase in the use of the Internet as an educational platform in Tertiary education. The creation of online courses has meant that the student base for traditional courses has changed from local students to a combination of local and international students. This change in audience has meant that further investigation into students learning styles is needed to ensure that all students are able to complete the course successfully.

This paper will provide background information about online education, reporting on related research currently being conducted. Also presented are problems that existed for international and local students within this learning environment. The paper will conclude with lessons learned combined with guidelines to follow in order to lessen the severity of cultural differences between students.

1.1 Background

This paper provides an insight into the effects and issues involved in providing online courses to culturally diverse students. The Bachelor of Computing is a 3 year full-time degree offered at Deakin University. As part of the requirement to achieve the degree students are required to complete several core units each semester. One of the third year core units is Computers and Society and Professional Ethics, which is an on-campus, one semester unit.

The Deakin University 2002 Handbook [1] defines the goal of the Computers and Society and Professional Ethics unit as "... exploring the impact of Information Technology on society and investigating ethical and professional issues". At the completion of this unit, the students will have been exposed to the major ethical claims made against technology and will be able to assess and identify the issues involved. From this experience students will have developed their critical thinking, communication and research skills while considering these issues.

Deakin University is one of Australia's tertiary institutions that offer educational units via distance education. The Computers and Society and Professional Ethics unit (Computer Ethics) was part of the distance education program for the Bachelor of Computing offered by Deakin University since 1997. Generally at this time computing units offered via distance education in Deakin University, had paper-based study guides and readers, as well as web pages which contained up-to-date unit information and current announcements. The students also had access to their tutors via e-mail and telephone. However since 1997 we have had major technological advancement in the area of distance education. Therefore with the technology available today off-campus students are supported through web-based teaching technologies, such as: WebCT, FirstClass, Blackboard, etc. Student study guides are no longer provided in paper-based format, but instead have been converted into media documents. Another area that has improved since the introduction of web-based teaching technologies is communication. Through the use of the Internet, communication between off-campus students is easily achieved and therefore encouraged.

1.2 Unit Description

At the beginning of the semester, students were placed in groups to complete their tutorial requirements for the Computer Ethics unit. This format is much the same as that of students attending on-campus tutorial classes. The student groups are randomly generated, containing a mixture of both on and off-campus students. The student composition for this unit is quite mixed with a large number of International students participating in this unit. The percentage of International students enrolled in this unit on the Melbourne campus was approximately 50 percent of the total students. The majority of these international students were from Asia.

The Computer Ethics unit is a combination of two web-based platforms, WebCT and FirstClass. The inclusion of both applications caused initial confusion for students. Some students were unsure about what they had to do in each application, even though it had been explained that the WebCT site was their resource page, where they could access the information that they needed in regards to the unit; and the FirstClass platform was referred to as the discussion center, where students could interact with one another. The students were also required to use FirstClass to submit their assignments electronically. The complexity of having two online platforms running in parallel does not assist students with the cultural problems encountered when learning online, but rather adds to the confusion and uncertainty encountered.

The following communication tools were built into the FirstClass environment available for student communication:

- A message board for daily information updates posted by the instructors.
- Resource area, where students can post their responses and store completed work.
- Resume containing student information, which they enter themselves.
- Facility to conduct synchronous (real-time) communication.
- Social Club where students can discuss anything other than the unit.

Students received frequent e-mails from their instructors, providing them with updated class news, general class information and answers to common questions. This information was distributed via a global e-mail sent to all students enrolled in the unit. These bulletins were also posted in both WebCT and FirstClass; this ensured that all students were well informed about the unit.

With this unit there are no on-campus lectures or tutorials, the unit is run completely online for both the on and off-campus students. The on-campus students did not respond favorably at the commencement of the unit. In the University on-campus environment most units that students have completed during their degree have been instructor-centered, rather than the student-centered approach that online units require. Hence, participating students had to become accustomed to this new learning style and environment.

2 Related Work

Some researches have acknowledged that in traditional learning environments students from different cultures have different learning style. This paper hopes to identify whether these different learning styles still exist in online learning environments.

2.1 Cultural Issues

Several studies have indicated that different cultures have various levels of compatibility with different styles of learning. A number of researchers even claim that some cultures may embrace the online learning environment more easily than others.

The inclusion of multiple cultures in university courses means that a more flexible approach should be taken with the design of these courses to ensure that all students are able to reach the course goals [2]. This includes making use of various cultural ways of knowing, interacting, and teaching; and to promote the acceptance and equality of a variety of learning outcomes.

Nielsen (1996) [3] provides some guidelines for the interface design of internationally used environments. For example, ensuring that the interface does not contain icons that could be offensive to other cultures (e.g. a pointing finger); avoiding the use of visual puns to symbolize items on screen (e.g. using a coffee cup to indicate a cyber café where users can chat); desist from the use of metaphors (e.g. although they may be understood by local users, they might have a different meaning to international users); finally if content translation is planned, make sure that the content is translated in its entirety. By making use of these guidelines, we will be able to offer students an

unbiased foundation. If students can understand the interface, then maybe they will be comfortable in the online environment.

2.2 Learning Styles

In online learning environments it becomes apparent that differences exist between cultures in the way they learn and their approach to learning. Conlan (1996) [4] identifies that the approach of many Asian students to learning is that of memorization and rote learning. This type of learning style is adopted in cases where students are presented with the learning content that they needed by their instructors/teachers and then they memorize (to reproduce) the required material. Whereas many Australian students, as well as others from similar Western backgrounds, have been encouraged to learn through the questioning of facts and understanding of concepts, rather than to reproduce the information. Due to this encouragement to understand concepts Australian students are more accepting of student-centered learning.

Munro-Smith (2002) [5] states that in a comparison of Singaporean and Australian students that students from Singapore prefer face-to-face interaction rather than the online interaction. Students in Singapore have been known to exchange their contributions in person and conducted editing around one computer. Australian students, on the other hand, prefer to conduct their communication through online channels only. In Singapore students prefer to print out the class material and use the material as instructions, whereas generally Australian students tend only to refer to online materials and then use their own ideas to apply that material to 'real' situations.

Cultural attitude towards knowledge acquisition will affect the way in which students are taught in society. According to Conlan (1996) [4], to "know" something for Asian students, often refers to being able to remember, repeat, reproduce, or recite the information in question. Whereas for Australian students, to "know" something is applied when the student has grasped the concept or is able to analyse the concepts fundamentals.

From these statements we can see that the reproduction and memorization of material is considered to be the correct way to learn in the Asian culture. Both papers [4] [5] agree that Asian cultures hold great respect for their teachers, therefore to ignore resources provided is seen as being disrespectful to teachers. Alternatively, in Australian culture to question the information and develop independent learning skills is deemed more important than the ability to reproduce information. We can see that from these two basic definitions that both cultures hold very different approaches and beliefs in learning styles. Therefore taking the one learning style fits all approach to e-learning does not seem appropriate.

Providing students with practical activities is an approach that could be used to increase student understating of the content. Hence, in the online environments students would be presented with the information content on screen, they would then have a set of activities or tasks, relating to the content, which they would be required to complete. This approach promotes the understanding and application of the facts, rather than the replication of them.

If we take another comparison of culture, this time between America and Finland, we can identify another set of attitudes towards learning. The paper written by LeBaron et. al. (2000) [6] identifies several cultural differences evident in the course run between these two countries. There was a distinctive difference between the participation between the Finnish and the Americans. It became quite obvious early in the course that the Americans were much more talkative than the Finnish. The students from Finland tended only to respond when they felt they had something worthwhile to say.

The students from America and Finland presented very different attitudes towards learning, this could stem from the fact that tuition for higher education in Finland is free and they are only assessed on a pass-fail basis. This is quite different from the pressure placed upon students in American institutions, to achieve high grades, and to pay for their education whilst studying. This difference in student pressures will be likely to have an impact on the outcome of their course.

In learning environments it is important not to make generalization in relation to student groups and cultural backgrounds as each student is individual and has different needs, this is even more important when we are dealing with online learning environments.

3 The Problem

The number of international students studying in Deakin University has been on the increase over recent years. Therefore the appearance of different student learning styles has become more obvious. It has been identified by some researchers that students from different cultures learn differently and have different approaches to learning. It has been recognised that the different learning styles become more apparent in the online learning environment. This difference is compounded through the Computer Ethics unit, ethics requires the application of morals and beliefs and as we know these factors differ considerably from culture to culture.

Teaching ethics online is an interesting topic, but when compounded with the globalisation and cultural diversity in the classrooms of today, the uniqueness of this topic increases. Ethics by itself is one of the more complex issues to teach, and teaching it to a multicultural group of students can produce some interesting results and responses. Gotterbarn (1991) [7] stated that psychologists have shown that the most effective method of teaching ethics is by discussing the issues with peers. Therefore providing an open environment where students can converse freely with one another provides the ideal platform to conduct this unit.

The combination of on-campus, off-campus and international students has provided a broad base for discussion in this unit. Students from each of these student groups will have different opinions, views and experiences to apply to the ethical situations given. However, within the student base each cultural group has its own specific set of values, ideas and beliefs that relate to their cultural needs. Children are raised up by their parents/guardians with a set of beliefs and ideas, from which they themselves have been raised. So when we put the subject of ethics, which relies on moral values, into an online environment, the results are interesting.

What is interesting about teaching ethics online is that we have access to different opinions, reasoning, and outcomes to the ones that we (ourselves) would produce. In terms of teaching ethics, sometimes it is hard to look beyond our own cultural beliefs to understand what other students are saying.

3.1 Cultural Differences

Due to the large number of international students enrolled in this unit, the response to tutorial tasks varied considerably, therefore enabling us to identify that the students were not all of the same cultural background. It was interesting to see that the opinions of students in relation to everyday situations varied in regards to their cultural beliefs, for example, one student posted a response regarding traffic lights. The student stated that they would not cross a red light (at a traffic intersection), not because of the road rules or the fact that they might have an accident but due to the fact that if they did cross the red light then God would be displeased with them. This is not how most western cultures would view a red light, they would generally think about it in terms of obeying the road rules. These different perceptions on given situations are what make our cultures unique, we should use this information to broaden our own cultural awareness.

Towards the completion of the unit students were required to participate in a collaborative assignment online working in groups. The groups were arranged based on topics selected in the previous assignment, therefore the groups were a mixture of on-campus, international, and off-campus students. At the release of the groups on-campus students immediately approached tutors to ask if they could be put into groups with their friends to complete the major assessment. This normal request of students wishing to change groups was made interesting, due to the fact that nine times out of ten the 'friends' that they were asking to be placed with, were of the same cultural background as themselves. The students were trying to reorganize the groups so that they would be paired with other students who held similar values and ethical beliefs, therefore making the explanation of their ethical choices and positions easier.

For instance, during the semester students were required to read a passage of text about a situation, the students were then asked to make an ethical decision about what the outcome of the situation should be. Defining this outcome required students to make use of their beliefs, values, and what they have read; and apply them to the situation in order to derive an ethical decision. It is in the justification and explanation of the student's answers that we can identify different cultural groups, due to their unique standpoints and opinions.

3.2 Students Online Difficulties

As this was purely an online unit both for the off-campus and on-campus students, there was to be no face-to-face contact. However it did not take long for on-campus students to visit their tutors. It was interesting to note that the ratio of international on-campus students to local on-campus students who sought out face-to-face help was approximately 8:1. This indicated that perhaps the international students were not as

confident working in a student-centered environment than the local students. This is consistent with the information presented in papers [4] [5] [8] which identifies that Australian students were more accepting, comfortable, and confident working in the student-centered environment as opposed to Asian students who preferred the more traditional instructor-centered approach.

Another interesting fact in teaching this unit online is the need for constant validation that some students require about their work. This need is also evident in on-campus units but to a lesser extent, where students simply approach the instructor in class for help. In the online environment it became very obvious when one student is constantly sending messages asking if what they have done is correct. This reliance on instructor support and validation can also be linked to cultural issues. If we refer back to Asian culture, students follow the instructions their teachers provide them with very closely, therefore in an environment where the instructions require students to apply their own ideas this group of students may experience problems.

3.3 Ethics

Ethics is such a gray subject that it is often hard to determine the validity of a comment, judging which answer is “right” or “wrong” rarely applies. In ethics the correct answer comes down to the explanation and justification for the answer given. At the beginning of semester one student acknowledged this lack of right and wrong answers by saying, “In ethics if you argue your position well there are no wrong answers.” This statement clearly identifies the view that in ethics, people have different positions and beliefs, therefore it is how you defend and provide support for your answers that counts.

Providing an explanation for their ethical decisions was an area where some students had trouble. Students knew immediately whether the problem presented to them posed an ethical issue or not, but they had trouble explaining the reason for their position. This could be due to their inability to express themselves using the language (English). Some students limited their responses in terms of word count due to their unfamiliarity with the language: for example, students only provided a few lines of thoughts in relation to complex topics without any explanation.

According to Coldwell (2000) [9] traditional computing units generally require students to use problem solving skills in a technological environment, calling on mathematical and programming skills as well as the ability to memorise content. However, the emphasis of the Computer Ethics unit differs considerably to other units previously completed by students in their Bachelor of Computing degree. In Computer Ethics the focus is on student collaboration and the sharing of ideas rather than the learning of technical skills. The technical-oriented students perceived the Computer Ethics unit as confusing, as they are not familiar with student-centered learning. In this unit however, students do not learn technical skills ‘per se’ but rather are required to participate in discussion about issues relating to technical, social and professional situations, in a highly technical environment.

Another difference in running Computer Ethics online as opposed to other computing units is the emphasis on discussion. Traditionally the focus of programming units has been on the individual completion of work rather than on the combined input of stu-

dents. However, Computer Ethics students are reliant on the members of their group to participate in the tutorial discussion in order for them to complete the unit successfully.

4 Lessons Learned

During the course of the unit it became apparent that certain areas of the online learning environment proved more troublesome than others to international students. These areas related not only to the content provided but also to the learning environment itself.

4.1 Creating a Suitable Social Environment

The idea behind this research is to provide all students with an environment that they can learn in. For instance, providing a single information session at the beginning of the semester for the International students will ensure that they hold the necessary information and skills required to navigate this web-based learning environment confidently.

Providing a social environment for the International students to discuss their problems and questions together could also be another means of improving their experience. This option is available in the FirstClass environment; however it is not fully utilized by the students. Often students will talk more freely about their problems to one another rather than with their instructor. This social environment could be used to discuss unit related problems or even general problems with settling into a new country.

It is important that when designing the unit we realize that the students who will be participating in the unit come from different backgrounds, therefore the environment can not be designed with one specific group of students in mind.

4.2 Cross-Cultural Design of Online Materials

When we combine international and local students in one learning environment, consideration is needed to ensure that all students are provided with a fair and unbiased learning environment. In paper [10], Collis and Remmers (1997) have defined two basic categories for educational web sites in relation to cross-cultural application:

- Category 1: Sites made for one context and its culture, but visited by those from other context and cultures.
- Category 2: Sites made specifically for cross-cultural participation.

They concluded that a majority of educational web sites today fit into the first category and that generally only those institutions specifically catering for cross-cultural education e.g. institutions that are fostering multinational educational partnerships, fit into the second category. However with the culturally diverse classes that we have in today's society we should be creating web sites using Category 2. The continued creation of Category 1 web sites demonstrates the lack of awareness to the increase of multicultural classes.

General items that should be taken into consideration when designing online materials, in order to reduce the effects on students from other cultures, include the following:

- Providing an environment free of colloquial language and cultural slang.
- Identifying items or language that may be offensive to other cultures.
- Identifying areas in which cultures learn differently, and make allowances for this in the learning outcomes.
- Providing an environment which ensures that all students are able to understand the material.

The above are just a sample of techniques that can be used to reduce the barriers between cultures in the classroom and in online environments. In the case of online learning environments providing links to general educational tools, such as, dictionaries, thesauruses, and spelling aids, as part of the unit resources will help to increase the understanding for all students, both international and local.

4.3 Combined Teaching Materials

The simple transfer of text-based information into online courses is not the answer; the materials need to be adapted to fit the online environment. It has been acknowledged that different cultures respond to the online environment with varying degrees of acceptance. Therefore we need to create a balance between the traditional methods of teaching and the new web-based learning technologies.

Students are confident in what they know, therefore, if we use the teaching methodology of the instructor-centered lectures combined with the teaching philosophy of on-campus tutorials, then we will have created a recognizable and familiar learning atmosphere online. By applying these methodologies and philosophies to the online environment we can use a combination of instructor-centered explanations with student-centered activities to strike a balance [4]. If we adopt this new philosophy into the online environment, we have a chance of improving student confidence in participating in web-based learning.

McLoughlin and Oliver (2000) [11] have assembled several design principles for use in culturally inclusive curriculum for online learners. These principles include, adopting a knowledge philosophy that is accepting of multiple perspectives; incorporating “real” learning activities that will build on existing knowledge, values, and skills; knowledge sharing to facilitate online learning communities; providing both internal and external support; encouraging students to be proactive in their learning; providing flexible learning goals to ensure that all students are able to achieve them.

Deakin University currently has in place several of these principals in online environments. The facilitation of online discussion (knowledge sharing) between students is encouraged and provided for in both WebCT and FirstClass. In these systems students are able to post messages to all students with the addition in FirstClass to specify group members or individual students. This interaction between students online can be used to improve the student’s online skills, and participation in online discussion.

Support in any unit plays a vital role in student success; in the face-to-face (on-campus) environment support is a tangible thing, where students can approach the tutor/lecturer for help and guidance. In the online environment this support is less “real” and therefore is not utilized to its full potential. Therefore concrete support strategies need to be adopted in the online environment, whether it is peer-based or instructor-based support.

If the current approach is toward offering more units in the online environment then providing more opportunities for students to be proactive towards their education are needed. Making online studies part of the tertiary education experience from the beginning will improve students’ skills and awareness of their learning environment. This initiation into the online environment could be limited to include simple online activities within units as a means of integrating student into online learning. Providing flexibility in the learning goals and being accepting of different student perspectives should also be integrated into online learning to ensure that all students receive the same opportunity to achieve these goals.

Taking the above principles into consideration when deciding what material to present in the online learning environment should help ease the difficulty in producing information that can be understood by all who read it. Obtaining all students understanding may seem unachievable, but by providing an unbiased base we have a good foundation from which to develop our online learning environment.

4.4 Future Work

The next stage in this research is to look generally at culturally diverse students participating in online studies and survey these students in order to formalise their opinions about problems encountered whilst learning using online environments. After the analysis of these results research will be carried out to produce a model aimed at accommodating student problems in using the online education environment.

5 Conclusion

At present there seems to be no major problems with putting courses online; however with the changing needs of society it is important that we no longer simply design our classes for local students. We must be aware of the diversity in classes and take into consideration the needs of all students. Designing and providing an environment that is understood by all students should be our highest priority. We have advanced enough to know that one type does not fit all and that adjustments are needed if we are to continue to promote global learning.

The dissolving of cultural boundaries in online learning will only occur if we first understand what those boundaries are. We have the technology to provide global education; the focus now must be placed upon ensuring that the educational content and resources we provide can be utilized by all students.

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