COMP3900/COMP6390 Human-Computer Interaction – A Course Evaluation

Professor Bruce H. Thomas
University of South Australia

1 INTRODUCTION

This report describes my evaluation of the course COMP3900/COMP6390 Human-Computer Interaction. These observations are from my visit on June 23rd and 24th of 2016. The conclusions are based on interviewing the academic in charge, interviewing a sample of students from the course, reading the course documentations, and reviewing the course web page.

Overall I found the course very professional developed. All the course content is well presented. The structure of the course is excellent. The academic in charge Duncan Stevenson is doing an outstanding job. This course is a very interesting and covers a large portion of the topic area. The course is inherently difficult to teach. There are many different topics to cover. Duncan has done an excellent job in providing the students some tangible “hands-on” experience in evaluation techniques.

The report provides a more detailed review the documentation of the course. The review the documentation is followed by a description of the outcome of the student interviews. The report finishes with some suggestions for improvement.

2 DOCUMENTATION

This section is a review of the course documentation provided.

2.1 ASSIGNMENTS

I like how the assignments build on each other. This building allows the students to construct a larger project over the semester. I do not like this for courses in the student’s earlier years, but more senior students get a large amount of learning outcomes from this approach.

The approach of switching between the individual and group work is unique. I quite like the idea.

Assignment 1

The assignment is thoughtful and well written. The assignment allows for the students to be creative, but it is clear to the students how they are being assessed.

Assignment 2
Assignment 2 is a natural progression from assignment 1. It is also very well constructed.

Assignment 3

Assignment 3 is an excellent learning assignment. The students will get a very good grounding in running HCI experiments, as they are difficult to teach. This assignment is a great way to guide them through the process.

Assignment 4

Assignment 4 is a good way to have the students reflect on the learning experience.

Overall the assignments allow the students to be creative (a critical factor in HCI) and gain experience in evaluation techniques. I like the skill and theory balance with assignments.

2.2 COURSE OUTLINE

The course outline is well structured and clear for the students. I like the fact it is not verbose, but it has all the information the students need. From reading it, I have a good understanding of what is required of the students, and what the students are expecting from the course.

2.3 GRADES

The grades seem to be a bit on the high side, but I do not know what is expected of a senior course at ANU. To fully understand the distribution, I would have to understand what is a normal distribution for an ANU course and a normal distribution for this course over the past three years.

The table below shows the distribution of the grades provided to me. The percentages do not include the UN students, as they had unenrolled. I recalculated the grades on the UniSA scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD</td>
<td>85-100</td>
</tr>
<tr>
<td>D</td>
<td>75-84</td>
</tr>
<tr>
<td>C</td>
<td>65-74</td>
</tr>
<tr>
<td>P</td>
<td>50-64</td>
</tr>
</tbody>
</table>

When viewed on the UniSA scale, the grades appear to be similar to upper-level courses I have taught and reviewed.
## 2.4 Final Exam

A small point, I prefer exams out of 100. It makes it easier for the students to understand the impact of each question.

The exam is well written and covers the topic in detail. The smaller sub-questions allows the student to understand what is expect from the question overall.

A small suggestion is to have one question that requires the student to put the total answer together without the sub-sections. This form of a question would test the student's higher-level reasoning.

## 2.5 Marking of the Final Examination

The marking of the final exam was done professionally. I was given seven exams to examine, and I was only able to read six of them (one of the scanned exams was too faint to read).

I was clear from the marking the exam was able to cater to students of different abilities. Some of the exam answers showed students of a high distinction ability, and other exams depicted students of pass and credit level ability. The marking of the examinations was performed well, and I agree with the marks given. Because reasons for the marks being taken off were not given (which is normal in examination marking), I was required to make a judgement on the marking. The marking appeared to be quite consistent across the six papers.

I note all of the exams depicted students who seriously attempted the final exam. While not all the students received high marks for the exams, all the students attempted a large portion of the exam. The fact the students attempted large portions of the final examination demonstrates the examination covered core topics of the subject.

## 2.6 Review of Student Work

I reviewed the student work provided.

The comments on work were very detailed. The lecturer provided excellent feedback to the students. The students know what is expected of them and how to improve. This level of detail is very much of a better quality and larger quantity than most courses I have observed.
The students work presented a range of quality. Some very excellent and some middle of the road. It is clear the course stretches the students of different abilities.

2.7 REPLYING TO THE POINTS RAISED IN THE RECENT STUDENT FEEDBACK FOR THE HCI COURSE.

The academic addressed a number of concerns. Some responses were clarifications, and some were noted methods of improvements.

2.8 STUDENTS RESPONSES

The course overall had very positive responses.

The student responses range in the very positive with a number of points. A number of these points were addressed in the course coordinators responses.

2.9 WEB PAGES

I have reviewed the Wattle web pages for the course. They are well laid out in a logical structure. It is easy for the students to access the required information.

3 STUDENT INTERVIEWS

3.1 STUDENT A

This student was very positive about the course. The phrases they used to describe the course were as follows:

- Different,
- More creative,
- More thinking,
- It puts you in the shoes of the user,
- Interesting,
- Pleasant,
- I liked it, and
- Did not stress.

The overall workload of the course outside the contact hours was about seven to eight hours per week. This level of workload is normal for a course at this level.

They felt the assignments were fair in what they asked them to perform and in the grading.

The student suggested a number of possible points of improvement.

1. The tutorials could have a rethink. The purpose of the tutorials is a bit unclear.
2. The inclusion of another tutor might help with the tutorials.
3. The lecturing style towards the end of the semester was a little monotone, repetitive, and "static”.
4. One possible solution is to bring in an HCI guest lecturer later in the course.
5. A second option is to use some videos to highlight some concepts.
Overall the student enjoyed the course. They: “Got a lot out of it.”

3.2 STUDENT B
This student mainly had positive points about the course. These will be outlined below. They pointed out some major challenges to the course (not the teaching of the course).

- The overall challenge is to position this course in the total curriculum.
- This course is the only advanced HCI course in the major focused on design and evaluation. There is pressure on this course to cover a large amount of topics that are not covered in other courses. This leads to the possible solutions:
  - Add more content other HCI courses or other courses, and
  - A new HCI course that covers more material.
- The course has to cater for students from a number of different backgrounds and levels of ability
- There is an overlap between this course and Group Software Project. There is the potential to harmonize the content between the courses.

3.2.1 Positive comments about the course:
- Clearly, defines the learning outcomes.
- It does what it set out to do. The outline is clear.
- Taught well
- Touches on a number of key topics
- Lots of core topics covered
- Skill development in:
  - Critical thinking
  - Qualitative evaluation
  - Self-Reflection
- The course provided an interconnection between the subject matter and:
  - HCI research at the ANU
  - Research in the larger CHI community
  - Industry

3.2.2 Improvements:
- Content on the light side
- Some more content could be included
  - HCI theory
    - Overview of other theories
  - Other evaluation methods should be covered, such as
    - Diary studies, and
    - Cultural probes, and
    - Ethnography.
  - Prototyping skills
    - Early stage prototyping
    - Wireframing, and
    - Graphic design.
  - Different design approaches
    - Participatory design
• Only user-centred design approaches explored
  • Solution is to have a critical discussion of the use of UCD and
  • Compare UCD with other methods.

3.2.3 Assignments
• Positive comments
  o The workload and style of assignments are consistent with other universities.
  o This course is the students first exposure to:
    ▪ Design of experiments,
    ▪ The concept of research questions,
    ▪ Conducting interviews,
    ▪ Evaluation of qualitative data,
    ▪ Reflection, and
    ▪ Writing up research results.
  o No rote learning any content
• Pitfalls of the early assignments in the semester
  o Specifications are not clear,
  o Assessment criteria could be more clearly spelled out, and
  o The rubric should have more detail.

3.2.4 Teaching (All positive comments)
• The lecturer had a student centred approach in mind at all times.
• Small and large discussion groups worked well.
• The course had a strong group focus.
• The lecturer brought a large amount of experience to the course, and the background with CSIRO was very helpful.
• The course caters well to a diverse group of students.
• Real world connections to the course.
• The guest presenters add a great deal to the course.
• The student said it was well taught more than three times!

3.3 Students C and D

There were two students interviewed at once. One student double majored in systems engineering and computer science and the other student was a psychology major.

Both students very much liked the course. HCI was the first course for both of them. Both students were heavily engaged in the course, but one student did not attend all the lectures.

While talking the students, it became apparent they did not realise how much time they spent on the assignments. The work was engaging and enjoyable. While they spent a reasonable amount of time investigating issues concerning the assignments, the workload did not “feel” like a large amount of time.

Comments included:
• Interesting
• More engagingly taught than other courses
• It was one of the smaller classes in student numbers
• Likes the tutorials
• The lectures were constantly in a tutorial style, and this was engaging
• Was not a difficult course
• Less time was spent on this course than others; this leaves room from deeper content
• The lecturer and tutor were very approachable
• The lecturer cared about the learning
• Group learning positive experience; this made for a different experience

Areas of possible improvement

• Could accommodate more topics
• Mark attendance to encourage attendance to lectures
• More detail on the HCI topics could be done
• More areas of HCI research could be included

3.4 Student E

The student very much enjoyed the course. The course provided a different set of useful skills than other computer science courses (other than coding or maths). The course helps the student understand how people use a product and what users’ think of those products.

“I really like Duncan!”

The guest presenters were positively received. The presenter with the vision impairment was extremely good.

At first appearance, the course seemed to be simplistic, but the student quickly realised the importance of the topic. The student felt they learned from the course. They are applying this knowledge while currently working for a company that performs design thinking activities. The course helped them understand the concept of design thinking.

The student the course should contain more design thinking content. A method to increase the content of design thinking could include inviting professionals that are working in design thinking.

The lecture and tutor were very approachable. The lecturer would stay back after the lecture to help the students.

“Duncan and Tom have done such a good job!”

4 Suggestions

There are a few suggestions to improve the course on top of what was presented in the report to this point. There is a large amount of content in this course. The course cannot include everything concerning this topic. These suggestions must be taken in the context that they might require removal of content. The number of changes is a judgement left to the academics in charge of the course.
4.1 Personal Suggestions

The first is I would provide an overview of quantitative experimental designs and then an overview of the analytical techniques. The choice of analytical techniques greatly impacts on the design of the experiment. I might have missed this in reviewing the lecture notes, but here is one suggestion, an overview of the following topics:

- independent and dependent variables,
- within versus between group analysis,
- t-tests versus ANOVA,
- parametric testing versus non-parametric testing, and
- data cleaning (removal of outliers).

Second I would add this paper for the students to read.


This paper represents a foundation of many interaction students for the past 25 years.

4.2 Recommended Student Suggestions

The students supplied suggestions to improve the course. I found the following ones to consider first:

- The overall challenge is to position this course in the total curriculum. The course has a number of topics it is covering. There is scope for a second course in Human-Computer Interaction. This second course could cover a range of topics such as natural user interfaces, 3D user interfaces, mobile user interfaces, user interfaces for virtual environments, and IoT with user interfaces.
- Have a look at the between this course and Group Software Project. There is the potential to harmonize the content between the courses.
- Have a look at the specifications for the assignments. There were comments the first assignment had some problems with the students understanding what was expected of them. This problem was fixed for the later assignments. Make sure the first assignment is corrected.
- The course should broaden the topics on qualitative evaluation techniques.
  - Other evaluation methods should be covered, such as
    - Diary studies, and
    - Cultural probes, and
    - Ethnography.
  - Prototyping skills
    - Early stage prototyping,
    - Wireframing, and
    - Graphic design.
  - Different design approaches
    - Participatory design
    - A critical discussion of the use of UCD
    - Compare UCD with other methods.
  - Include more design thinking content
  - Have more guest lectures on HCI topics
4.3 **Possible Additional Improvements from the Students’ Suggestions**

- The course could provide an overview of other HCI theories.
- The inclusion of a second tutor might help with the tutorials.
- The lecturing style towards the end of the semester was a little monotone, repetitive, and “static”.
  - One possible solution is to bring in an HCI guest lecturer later in the course.
  - A second option is to use some videos to highlight some concepts.