



# Critical Theory and the Education of Information Technology

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## ABSTRACT

*This paper contributes to IT education by discussing the rationale, description and educational outcomes of a new course developed as part of a masters program in information systems. The course uses Critical Theory as a lens to examine current information systems theories and practices. The course engages students in critical discourse about the foundations of information systems and the roles that information technology plays in the lives of people as individuals and as members of complex social institutions. Emancipatory approaches to improving organizations' uses of information technology systems are emphasised. Ethical considerations related to offering the course are identified.*

## INTRODUCTION

The field of information systems is a broad church that is informed by many disciplines. Research is usually very applied and focuses on practitioner and management issues associated with the design, development and management of systems for the provision of information to members of every type of organization. Teaching is usually in the nature of training for practitioners and managers. The literature is replete with theoretical debate, empirical studies and practical advice for information systems professionals and business managers. Information systems programs offered by universities usually distil the essence of this research and package it into what are mostly training programs for professionals. They rarely reflect on information systems theory and practice.

This paper explains the rationale for and educational outcomes of a new course developed as part of a masters program in information systems. The course is perhaps unusual in the approach used to meet its objectives, therefore this paper may be of interest to other educators. The purposes of this paper are fivefold: to share the ideas that have led to the development of the course, to share the course syllabus, to show its educational worth, to raise ethical issues and to seek comment and feedback from fellow academics.

After explaining the rationale for the new course, the course is described and its content examined. Some analysis of course outcomes is then offered. Ethical concerns are raised and suggestions for future directions are made.

## COURSE RATIONALE

Australian universities, like their international counterparts, exist in times of rapid and confusing change. Concomitant with these changes is pressure on universities to move from their traditional roles which include critical analysis of matters of public importance and embrace instead a lower-order role as a vocational trainer. Many academics and university governances seek to resist these pressures and maintain a strong educational dimension to their courses and programs. Kenway (2002) argues that in the light of all of this, universities need to reconsider their educational projects and to identify new ideas that will inform and keep their work widely relevant. Universities need to assist our society to understand much better the forces that are splitting us apart, those that are producing social integration and those that are generating new bases for solidarities. The course described in this paper is an example of the educational spirit to which Kenway refers.

Mingers (2000) suggests that "the prevailing view in business schools is the utilitarian one that management education is primarily

concerned with enhancing management effectiveness." Grey and French (1996) offer a contrasting view for management education. They state that educators should offer a *critical* view that is separated from management education so that the claims and practices of management can be called into question. Mingers (2000: 221) emphasises that "the point is to raise very fundamental questions about the status and validity of management theory and the extent to which it privileges only one, primarily functionalist, view of knowledge."

The author of this paper believes that this utilitarian view is embraced by schools of information systems as well as schools of management and that a *critical* view of information systems provides a platform from which students can examine and question theories and practices within the field of information systems.

Mingers (2000) asks what it means to be *critical*. He offers four views: critical thinking, critical social theory, critical management studies (strands of thought within management studies that draw on the work of Habermas), and the work of Foucault. From these four views Mingers synthesises four aspects of a critical approach that he uses as the basis of a course in critical management studies: critical thinking, the critique of tradition, the critique of authority and the critique of objectivity.

Rather than following Mingers, the development of the course described in this paper is built on Critical Theory, the extensive body of work associated with the "Frankfurt School", a term which refers to the work of members of the Institut für Sozialforschung (Institute for Social Research).

Critical Theory is now a broad rubric for an intellectual movement rather than a specific theory. It began in the 1920s as a project in the Institute for Social Research involving individuals from various disciplines working together to develop an historical and systematic theory of contemporary society. Critical Theory offers a multi-disciplinary approach to social theory combining perspectives drawn from many disciplines and provides a focus for study that removes the barriers created by established academic disciplines.

Critical theorists argue that human relations under capitalism are governed by commodity and exchange relations and values. They argue that capitalist society produced a rigid, reified structure wherein human beings are transformed into things. Further, through the process of reification, the unnatural conditions of the capitalist economy and labor process, the commodification of all goods, services, and objects, and the new modes of thought promoted by the mass media and positivist science appear to be "natural" and to form a system impervious to human control or intervention. Critical theory is thus rooted in "critical activity" which is oppositional and which is involved in a struggle for social change and the unification of theory and practice. "Critique", in this context, therefore involves criticism of oppression and exploitation and the struggle for a better society.

The Frankfurt School eventually became identified with theories of a "one-dimensional society" which theorised increasing social control under capitalism and the development of new forms of control. New forms of technology are thought to contribute to these controls.

Critical Theory provides a way to scrutinise contemporary practices and institutions. It supports the Enlightenment tradition of critical self-reflection to develop a questioning attitude towards the claims of

authorities, including the claims of management theories and gurus. The intent of Critical Theory is to challenge the legitimacy and counter the development of oppressive institutions and practices. Its aspiration is to foster the development of organisations in which “communications and productive potentials are progressively less distorted by socially oppressive, asymmetrical relations of power” (Alvesson and Willmott 1996: 18). Lee (1999) writes that Critical Theory has not received the attention it deserves in information systems research and teaching.

Critical Theory provides a framework in which current information systems theories and practices can be examined. Without a critical approach theories and practices can be presented to students, however there is no rationale for their critical examination. This author believes it is essential that information systems masters students be introduced to reflective practice and to emancipatory approaches to their thinking. Without such an emancipatory approach, academics may present material on the relationship of information systems to organisations, cultures, structures etc, but fail to provide any framework to analyse these relationships. This is a major limitation to the quality of education of information technology graduates. Business schools must go beyond teaching “how” and address the question of “why”. This is an essential part of higher-level education for new professionals.

## THE NEW COURSE

The new course is titled *Critical Approaches to Information systems*. It is part of a masters program designed to provide professional postgraduate education in the application of contemporary and emerging organisational information systems for those seeking a career in organisational management and for existing managers seeking to upgrade their knowledge and skills. The program consists of twelve courses taught over three semesters or one calendar year. Students complete seven core courses and five electives.

The course is concerned with the development and use of information technologies in organizational contexts. It seeks to improve the students’ understandings of the role and impact of information technology across a range of social levels: society, organization and the individual. By encouraging an emancipatory approach the course contributes to improving the design and application of information technologies so that they are both more useful and effective for individuals, groups, organizations and society at large.

The aim of the course is to engage in critical discourse about the traditional foundations of information systems and the roles that information technology plays in the lives of people as individuals and as members of complex social institutions, leading to emancipatory approaches to improving organizations’ design, implementation and maintenance of information technology systems.

The formal objectives set the design for an innovative approach to introducing information systems students to Critical Theory and emancipatory thinking. The formal objectives of the course are to:

- explain the origins and nature of Critical Theory,
- discuss the merits of an emancipatory approach to information systems,
- discuss the emancipatory potential of information systems,
- explain and discuss a framework of multiple perspectives and
- discuss the influence of information systems practice on workers, their organizations and society.

The immediate difference to what one might expect in such a course is the formal inclusion of the topic “multiple perspectives”.

The formal syllabus of the course provides an opportunity for the study of traditional topics in non-traditional ways. The formal syllabus comprises:

- an introduction to Critical Theory,
- an exploration of the nature of organizations,
- the foundations of the IS field,
- multiple perspectives,
- an exploration of the relationship between information systems

and individuals, their organisations and society through multiple perspectives,

- the future of organisations and society in the changing IT environment, and
- world views and the theory and practice of information systems.

The course avoids the presentation of topics in traditional ways as traditional theory is thought to reproduce uncritically the existing society. The course seeks to provide students with tools and learning that will encourage a questioning attitude where the status quo is not immediately accepted. It is in this area that the innovative nature of this course is evident.

Within a single course it is obviously not possible to cover each part of this syllabus extensively. What is sought is the provision of sufficient material and opportunity for learning so as to interest the student in the topics, demonstrate the relevance of individual topics and allow time for students to see eventually each topic as part of a whole. Integrative assessment requires students to demonstrate their understandings.

The course is organized as a series of weekly, three-hour seminars; typically with twenty students per seminar. At the commencement of the course students are provided with a course guide that sets out the course structure. Each seminar is divided into two halves, with a single topic discussed in each half. The course guide provides students with information for each topic: the topic title, a proposition to be argued and initial readings to give them entrée to the topic.

The topics are chosen to introduce students to Critical Theory and a number of non-traditional views of organisations (Morgan 1997). This is followed by a model of multiple perspectives (Mitroff and Linstead 1993). The “lenses” developed in these first weeks are then used to analyse some effects that information systems have on individuals, organizations and society. The emancipatory approach provides a constant thread that provides cohesion for what might otherwise be thought of as somewhat disparate topics. The initial study of Critical Theory and the development of students’ understanding of emancipation allows them to consider each topic in turn through that “lens” and enables them to make connections that they might not make otherwise. At the end of the course students are introduced to the idea of humans having different *world views* and are provided with readings that introduce them to the concepts of *modernity*, and several views of *postmodernity* (for example: Lemert 2000). This is necessarily quite brief as time does not permit an extensive study. Readings on world views are included for several reasons. The understandings developed enable students to appreciate that the course is philosophically situated and that one could create a course that is informed by a different philosophical position. They are also able to see the philosophical position that informs other academic writings and courses. Propositions have been developed for their pithiness and relevance. Some examples of topics and propositions that have been used in this course are given in Table 1.

Within a single course, enquiries and analyses cannot be extensive; rather they are representative of how traditional areas may be rethought using the tools now at the students’ disposal. New perspectives allow

Table 1: Examples of Seminar Topics and related Propositions

Topic	Proposition
Introduction to Critical Theory	Argue that there is more to being critical than just being critical.
Organizations as machines	Argue that organisations are machines. What are the implications for IS?
Organizations as political systems	Argue that politics in organizations is more than “noise”. What are the implications for IS?
Organizations as culture	Argue that organizations merely reflect the wider social norms. What are the implications for IS?
Multiple perspectives	Argue that successful IS activity requires a multiple-perspective approach.
An introduction to critical management	Argue that management is more than a technical activity.
Information technology, control and power	Do information systems create power structures or do power structures determine IS design?
Technological determinism	Argue that technology innovation determines history.
Virtual organizations	Argue that the communications revolution has changed the boundaries of organizations.
Socio-informatics	The internet: benefits for all or just the chosen few?

new examination of questions, such as reasons why new information systems fail and how might organisations and society best implement and use information technologies. What might “best” mean? “Best” for whom? From these examinations students learn to avoid accepting received wisdom and learn to discern more effective ways of thinking about their own professional domains.

Assessment is a combination of group papers based on the set propositions and an individual essay on a topic that is designed to be integrative across the syllabus.

## COURSE ENVIRONMENT

A typical seminar room is used for the course, with students seated in a U-shape. All students are able to make eye contact with all their fellow students and the convenor. An important element of the environment is trust. The convenor goes to considerable length initially to explain the importance of trust within the class to facilitate open and full discussion that will lead to good learning experiences for all, including the convenor. Respect for individual needs is maintained as the members of the seminar deal with each other and maintain a focus on the educational process and outcomes of the course.

## EVALUATION OF THE COURSE

This section includes reference to the perceived educational outcomes and topics and formal evaluation by the students of the course.

### Perceived Educational Outcomes

At this stage no formal attempt has been made to formally assess changes in students’ perceptions of IS and IS topics, however there is considerable anecdotal evidence to suggest that the course has increased students’ understandings and awareness of the relevance and importance of multiple perspectives and that they are much more aware of the social effects of information systems. Students undertake the course at the commencement of their studies. It is intended that students should gain experiences and insights that assist them to form new ways of thinking about traditional topics. The coordinator of the course is able to work closely with other coordinators in the program who are sympathetic to the ideas developed throughout the course. These coordinators are receptive to ideas that students bring to studies in their courses and so there is considerable acceptance and reinforcement within the overall program of an emancipatory approach and the development of multiple perspectives and understandings of issues and problems. The other coordinators report considerable influence flowing from this course to students’ approaches to their other studies. They report that students’ discussions and work show evidence of much richer understandings.

### Student Evaluation

The comments within this section refer to the most recent offering of the course. The convenor engaged in a number of informal chats with students to learn of any problems and difficulties students were having. These informal discussions were useful for gauging students’ attitudes to the course. During the early discussions students expressed concern about the nature of the course and their difficulty with coping with new ways of learning. These comments were repeated in the formal evaluations.

Two formal evaluation instruments were used. The university provides a standard computer-based questionnaire that students may use anonymously. This provides a number of questions using a Likert scale for responses as well as three lecturer-generated questions that permit written answers to open-ended questions. Only a few students used this system and the responses were all very positive. Additionally, students were provided with a paper-based questionnaire containing fifteen open-ended questions. The questionnaire was administered so as to ensure anonymity. All students completed the questionnaire. All except one of the responders were very positive about the course. Typically they reported difficulty with the material and initial confusion as to how they should act in the learning environment. All reported that they were initially quite uncomfortable with being responsible for their own learning and would have preferred lectures. Students were unfamiliar with relatively unstructured seminar discussions and reported that it

took several weeks for them to become used to the mode of participating and learning. All but one reported that later they appreciated the opportunity to be responsible for their own learning and the opportunity for discussion and participation that the seminars provided. One question asked of the students was “if someone asked you about this course what would you tell them?” This question was answered very positively by all except one student: a typical response was “challenging, but worthwhile. Do it.”

## ETHICAL CONCERNS

This course does more than teach students current theories and practice in information systems. It teaches them that they are able to question the status quo, that they are able to question any and all aspects of information systems theory and practice. In fact, students are encouraged not to limit the application of their emancipatory approaches to information systems, nor in fact to place any limits on their thinking. The nature of the course places particular responsibilities on the designer and convenor of the course and the institution offering it. They must accept responsibilities that do not always attach to other courses.

An ethical dilemma arises from offering such a course. What is needed is serious consideration of what constitutes emancipation. This requires the taking up an ethical position. This can only be achieved through open discussion having consideration for the validity and appropriateness of ethical models. This is beyond the scope of this course and in any case would not be achievable within the other constraints of the course. Students are thus encouraged to adopt an emancipatory approach without recourse to moral debate. This is an issue that requires further analysis and consideration.

## FUTURE DEVELOPMENT

The current course provides opportunities to experiment with different materials, ordering of topics and class activity to find the approach that realizes the best educational experiences and outcomes. It is expected that the syllabus will be changed to reflect new needs that are identified by analyses of the current course. The ethical dilemma requires considerable analysis and will be receive attention in the near future. Currently this course is only offered to post-graduates. Further analysis would be required to ascertain if such a course would be appropriate for undergraduate programs and if so, what changes would be needed to make it suitable.

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