Engagement, Role-Behaviors and Thought-Leaders. An Analysis of Student

Behavior in Asynchronous Online Learning Environments.

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Dedications

This is dedicated to my wife Susan without whose love I would not have managed this.

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I could not have done this without my wife Susan whose endless patience, guidance, encouragement and belief in me has kept me going. This is for you.

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Abstract
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The rapid growth of online learning has exposed numerous fundamental gaps in our knowledge, both theoretical and pragmatic. This research investigated some fundamental questions of encouraging and maintaining student engagement, the role of emergent leaders in online leaning and the influence of different behaviors. Student behaviors in problem-based Asynchronous Online Discussion boards were analyzed for 10 graduate courses. Content Analysis was performed on discussion board transcripts. Messages were analyzed according to both Socio-Cognitive (Role-Behavior) and Cognitive frameworks (Anderson and Krathwohl, 2001) and student perceptions of peers as Thought-Leaders were elicited. Clear patterns of strong emergent leadership behaviors were evident in the majority of courses. The patterns of interaction and influence indicated that some behavior types (Facilitating) were fundamentally more important for collaborative knowledge building. The presence of strong but facilitating peer leaders was highly correlated with perceived satisfaction, levels of engagement and with objective measures of success such as deepening levels of student discourse. Thought-Leaders could be distinguished from non-Thought-Leaders from both their professional backgrounds and the role-behaviors they exhibited. Student perceptions of peers as Thought-Leaders were highly influenced by factors such as the extent to which students could bring in relevant professional experience into the discussions, a general sense of "quality: of the student

posts and the extent to which they started or promoted rich discussion. The Role-behavior framework presented was found to have substantial utility as an analytical framework due to its high concordance with the Anderson and Krathwohl scheme and with objective measures of discussion quality.

1. Chapter 1: Introduction

1.1 Overview

Online education has experienced a rapid growth in the University sector in the last few years (Allen and Seaman 2007). From 2002 to 2006 the total number of undergraduate and graduate students enrolled in at least one online course increased from 1.6 million to 3.5 million(Allen and Seaman 2007). This represents an increase from 10% of total degree-level enrollment to 20% in just 4 years. Further, online education is seen by many as critical to the long term strategy of educational institutions (Allen and Seaman 2007). The emergence of the Internet as a platform has further brought the prospect of content rich remote delivery within easy reach of many educational establishments. If we accept that online education is a political and academic reality then it behooves us to examine ways of making the experience as educationally effective as possible. We can neither ignore it and hope it will go away (Bonk 2002), nor can we simply shift traditional teaching unreflectively to a remote electronically-mediated arena

Champions of such electronic remote delivery (Benbunan-Fich and Hiltz 1999; Benbunan-Fich, Hiltz and Turoff 2001; Hiltz and Wellman 1997; Hiltz, Zhang and Turoff 2001) point to efficiency gains, flexibility for consumers and the potential for more effective learning. Other commentators are less convinced by these arguments and point to the longer preparation times (Burgess and Strong 2003), the anecdotal nature of many positive results (McNaught et al. 1999) and the lack of satisfaction with the process experienced by many learners (Ocker and Yaverbaum 1999). Other critics voice concern about perceived isolation, poor attendance, student lack of self-discipline and lack of

control (Miller, Rainer and Corley 2003), and even Hiltz (1994) warns that students may not be able to effectively manage their time.. In any case if we are to design effective online educational experiences we need to understand what is happening in online learning environments.

One popular tool for online learning is the use of asynchronous threaded discussion boards. Online learning systems like Blackboard© and WebCT© support asynchronous threaded discussion boards. Asynchronous threaded discussion boards allow learners to post when convenient and unlike Chat systems allow participants time to read prior posts and reflect on them before making their own contributions (English and Yazadani 1999; Lipponen 2001).

Constructivist paradigms stress the role of collaborative activity in learning (Lave and Wenger 1991), knowledge is built by individuals or groups rather than passively received. Learners construct reality by engaging with it. Waters and Gasson (2006) discuss differing levels of engagement in asynchronous online learning discussion boards positing Social Engagement – an extension of Kappelman and McClean's (1992) framework where learners are focused on group goals and actively iteratively engaging with course material. Social Engagement in particular and constructivism in general presume engagement with peers in a learning process.

1.2 Research Goals

This research aimed to investigate the effect of different types of student behaviors (role-behaviors and social engagement) on the online learning experience in online

asynchronous discussion boards. Within this framework this research investigated how peer perception of Thought-Leaders relates to how these Thought-Leaders behave (role-behaviors, social engagement). Further this research investigated the concordance between these differing ways of characterizing Thought-Leaders and student perception of the presence of Thought-Leaders. This research investigated whether there are any common characteristics that identify Thought-Leaders. Finally, I wanted to examine how the perception of the presence of Thought-Leaders relates to the perceived discussion quality.

1.3 Expected research contribution

This research attempted to fill some critical gaps in our state of knowledge with regard to student behavior in online learning environments. Literature about the effect of student leaders in online learning is very scarce. Educational leadership is traditionally focused on instructors, this is unsurprising, however exploratory research (Heckman and Misiolek 2005) has indicated that students may operate as emergent leaders in a community of inquiry. Similarly, there has been little attention to the issue of student engagement, its precursors and how it can be successfully fostered. This engagement is crucial to knowledge building. Waters and Gasson's (2005; 2006) research on the effect of student role-behaviors and Thought-Leaders has shown some interesting findings and some tantalizing glimpses of relationships between the elements mentioned above but these are exploratory at best and limited by a single small sample with a specific setting. This prior research represents a useful starting point for further study It was considered valuable to discover if these findings show any commonality in different settings with different students and different knowledge domains. Similarly, while each issue mentioned above

has received some small attention in prior research the relationships between them have been studied even less. This research was expected to determine the extent to which patterns of behavior in asynchronous educational discussion boards impact on participation quality and learning outcomes for online students. Further this research was expected to determine whether having strong core individuals (Thought-Leaders) has a notable effect on overall participation quality and learning outcomes. Did the presence of a small set of strongly committed individuals act to raise the overall level of participation or does a strong small core act to exclude others from actively participating? Did participants benefit from the example of some strong participants or do they feel constrained from joining what they may feel to be a clique? These questions were more broadly important as they give us clues as to how we should proctor online discussion. If a participatory democracy (Dewey 1933) is better than having benevolent oligarchy then we need to be proactive in moderating discussion to encourage peripheral participants (Lave 1991) to be more actively participative.

2. Chapter 2: Literature Review

2.1 Collaborative Learning

A common perspective for learning is provided by the constructivist philosophy. Constructivists reject the vision of learners as passive recipients of knowledge. In constructivism learners make sense of the world by actively constructing meaning from it. In the constructivist paradigm there is no "real" immutable knowledge instead each learner creates a world view (Jonassen, Mayes and McAleese 1993). Such learning is often regarded as highly contextual (Ally 2004; Lave and Wenger 1991) and the notion of abstract knowledge is regarded by some constructivist theorists as meaningless. Though the beginnings of constructivist thinking can be found in the philosophical ideas of Socrates, Vico, Kant and von Glasserfeld it is most often associated with Piaget. Piaget postulated the processes of adaptation and organization by which new knowledge and pre-existing knowledge are made into a meaningful whole. The key in constructivist educational approaches is to ensure that learners are active in the learning process. For some, such knowledge construction is best achieved in a collaborative environment where multiple perspectives can be brought to bear on a problem and where meaning can be socially negotiated (Jonassen, Mayes and McAleese 1993).

Collaborative learning research was spearheaded by the work of psychologists such as Johnson and Johnson (1975). They view learning is viewed as an intrinsically interpersonal process where groups work together to complete a problem-oriented task. This is founded on three core principles namely active knowledge construction;

cooperation and teamwork in learning; and problem-solving. In this model knowledge is not acquired but knowledge emerges through interaction (Whipple 1987).

In collaborative learning students are expected to integrate new material by actively working with it to create new knowledge (Smith and MacGregor 1992). This working to create knowledge cannot be abstracted from the learning context (Brown, Collins and Duguid 1989) and is dependent on interaction with peer learners (Zhang and Peck 2003).

There are a number of different approaches to collaborative learning. In the cognitive apprenticeship approach (Brown, Collins and Duguid 1989) instructor support is gradually lessened over time and at the same time students become more interdependent. Initially the instructor fulfills a mostly didactic role in keeping with Lave and Wenger's (1991) concept of peripheral participation, but as the process progresses the teacher takes on a moderating or facilitating role.

> *And apprenticeship also suggests the paradigm of situated modeling, coaching… Whereby teachers or coaches promote learning, first by making explicit their tacit knowledge or by modeling their strategies for students in authentic activity. Then, teachers and colleagues support students' attempts at doing the task. And Finally, they empower the students to continue independently"* (Brown, Collins and Duguid 1989).

In some models students are given a problem, some supporting information and organized into groups and sent forth to solve it thereafter. A typical example is described in Chapter 2 of Bruffee where students were provided with a framework for a task, the materials required and then asked required to work without instructor supervision in creating a group consensus, providing peer tuition and completing sizeable projects. . In

any case, the level and nature of teacher intervention can vary widely across strategies that purport to use collaborative learning.

Early computer mediated learning operated on an individualistic basis. Adopting a collaborative learning model for settings which lack physical co-presence brought a set of new challenges. This paradigm of online collaborative models has given rise to a new set of threads of research.

Classroom collaborative learning is relatively well established. The question of whether such a model can be successfully located in an online setting is a rather more recent concern. Hiltz (1998) in a study of computer conferencing suggests that collaborative learning designs can be more effective for online learning than approaches that emphasize individuals working alone, but for a group to adapt to collaborative work the instructor must mold, model and encourage the desired behavior. With such provisos the results achieved may be at least as good as those achieved with face to face models.

Hiltz (1997) also notes that

> *It does not "work" to simply make an ALN available and tell students that they can use it to ask questions about the readings or discuss aspects of the course at any time. If it is not a "required" and graded, integral part of the course, the majority of the students will never use it at all; and those who start to use it, will generally decide that "nothing is going on there" and will stop using it. The way in which ALN's can best enrich distance delivery, is to serve as the means to create the feeling of a true "class" or group of people who are learning together, and to structure and support a carefully planned series of collaborative learning activities which constitute the assignments for the course.* Hiltz (1997)

Removing cues such as power structures, gender and race appears to foster a more democratic debate (Haythornthwaite 2006; Huff and King 1988; McGuire, Kiesler and

Siegel 1987; Sproull and Kiesler 1991). Similarly, an asynchronous discussion model which does not require instant responses allows students more time to reflect on prior postings and to create better thought out replies (English and Yazadani 1999; Lipponen 2001). Despite the physical disembodiment it is still possible for online students to gain a sense of social presence which is necessary for collaborative learning (Gunawardena 1995; Rourke et al. 1999; Wegerif 1998). Sometimes it may be difficult to stimulate collaborative interactions (Guzdial and Carroll 2002) but a suitable mix of structure and assessment policy can encourage even the most reluctant students (Hiltz 1997; Macdonald 2003). Similarly, making clear the explicit requirements of a knowledge building discussion can encourage the desired collaborative behavior (Sorensen and Takle 2001), in this context Stahl (1999) described the essential elements as Brainstorming, Reacting, Organizing, Analysis and Generalization.

One emergent paradigm for examining online collaborative learning is Computer Supported Collaborative Learning (CSCL). CSCL is predicated on a number of theoretical and practical foundations. CSCL fundamentally takes a social constructivist perspective and argues that knowledge is socially constructed (Salomon and Perkins 1998), dependent on culture, mediated by artifacts (Vygotsky 1978), situated (Lave and Wenger 1991) and may be distributed (Pea 1993) or embedded in artifacts (Hutchins 1995) .

To the CSCL community, knowledge is best built through collaboration with peers (Scardamalia and Bereiter 1994). Knowledge building is best when knowledge is not didactically transmitted. In any case, deep knowledge is not transmitted but can only be

built in collaboration. Technology is used to support and mediate collaboration and learning is a natural outcome of this collaboration.

CSCL stresses the value of collaboration and we perhaps need to reflect on what we mean by collaboration. When we speak of collaboration we principally expect the interactions to involve joint activity towards a common goal. So far this could equally apply to cooperation. With Collaboration we expect people to work in common on a given problem or part of a problem. With some cooperative ventures we might split effort between group members and then fit it back together into a finished product like pieces of a jigsaw. In collaboration we expect a more concerted group effort. Dillenbourg, Baker, Blaye and O'Malley (1996) express the difference thus:

> *"Cooperation and collaboration do not differ in terms of whether or not the task is distributed, but by virtue of the way in which it is divided; in cooperation the task is split (hierarchically) into independent subtasks; in collaboration cognitive processes may be (heterarchically) divided into intertwined layers. In cooperation, coordination is only required when assembling partial results, while collaboration is a coordinated, synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem (p. 189)."*

Some commentators, however, do not agree to such distinctions. Sherman (1999) sees collaborative learning as a subset of cooperative learning. Certainly many practitioners who would refer to themselves as collaborative researchers have adopted many of Johnson, Johnson and Holubec's (1991) tenets of cooperative learning namely positive interdependence, individual accountability, small group skills and group processing. Others (Bruffee 1999) consider that the most important tenet of Collaborative learning is its part in an enculturation process which echoes Lave and Wenger's (1991) approach to

apprenticeships. Bruffee (1999) also points out that collaborative learning may show students moving towards behaviors that the teacher has not anticipated in advance and so teachers must be ready to fine-tune their approach on the fly. To some the difference is in the level of control that the instructor has, or the difference between a task-based focus (cooperative) or consensus-focused discourse (Roschelle 1992). Roschelle also suggests that

> *the crux of collaboration is the problem of convergence: How can two (or more) people construct shared meanings for conversations, concepts, and experiences? Collaboration is analyzed as a process that gradually can lead to convergence of meaning (Roschelle 1992)*

Harasim (1990) similarly, describes a related *three-stage* process based on generating (divergent) ideas where each participant creates and elucidates their own perspectives, connecting (linking) ideas where ideas are arranged or clustered into general positions and Finally, creating a convergence where knowledge is co-constructed based on now shared understandings.

One of the most commonly used methods of applying Collaborative learning in online settings is through the use of Asynchronous online discussion boards (Alavi and Dufner 2005). How easy is it to move the idea of collaborative learning from a traditional classroom to a virtual setting? Haythornthwaite (2006) suggests that there are numerous difficulties in moving from face to face to online collaboration

> *In online learning settings, students bring assumptions about how class work will progress that are based on face-to-face models of teaching and learning. Giving up those ideas may be very difficult, since students' sense of their progress and success may be tied to seeing the kinds of interactions they know from face-to-face classes. Thus, a class that never*

meets synchronously, or a grade based on group work, may represent a significant cognitive shift in what an individual perceives as a learning and educational outcome.

Certainly we do have sufficient evidence that a change of interaction mode may alter the types of interaction, the language used and the cognitive complexity of interactions., Bandy and Young discovered substantive differences between interactions using face to ace interactions, a simple but synchronous chat system and those using a fully-fledged group support system (Bandy and Young 2002). Group support, in this study, led to significantly greater levels of cognitive complexity in the content of interactions between participants compared to the chat system.

In online discussion boards students discuss course-related topics and contribute experiences, insights and opinions. Depending on how such discussions are moderated students may be highly Scaffolded (Rogoff 1990) in their discussions or left to learn though exploration of topics they have generated themselves. Such discussions can be highly correlated with student perceptions of course satisfaction (Dziuban and Moskal 2001) and online discussions may contribute greatly to perceived learning quality (Wu and Hiltz 2004). Similarly, collaborative online discussions are capable of providing support to allow participants to solve ill-structured (and therefore more realistic) problems better than if they are approached in isolation (Uribe, Klein and Sullivan 2003) Online asynchronous discussion is not however without its problems such as perceived delays between questions and responses, spotty member participation and sometimes lack of focus (Dufner, Kwon and Hadidi 1999). Oliver and Shaw (2003) found that grading such discussions was essential to ensuring active participation even if some students did

"game the system" by posting high volumes to satisfy a contract without being actually engaged, but without such grading active participation just did not occur. Bruffee (1999) reminds us that learning is a social process in which discourse is absolutely essential..

These latter studies are important in that they show the potential importance of online discussions; however they do not show any great insights into how students behave in online discussions and how different behaviors affect the course of discussions or the value that students get from such discussions. This is of course impossible without a detailed analysis of the content and patterns of student interactions; this is a notable gap that this research was intended to fill. Indeed Arbaugh and Hiltz (2005) bemoan the lack of research showing the connection between participation in online discussion and learning outcomes. This is quite understandable, while for small classes with few messages posted an instructor may easily assess the quality of individual contributions and see how they individually and collectively contribute to learning (Arbaugh and Hiltz 2005) when there are several hundred messages per week this becomes impossible. Yet some researchers have started to examine the content of asynchronous student discussion board interactions and make tentative conclusions Swan (2002) reports a study that suggests that online students actively demonstrate immediacy behaviors designed to lessen the "psychological distance between communicators". These social behaviors attempt to create a sense of community, though Swan does not yet show a connection between these behaviors and difference in objective or perceived course outcomes.

2.2 Leadership in online education

A community of inquiry as modeled by Dewey presupposes a level of participatory democracy. However there are some key issues about if and how such a community should be led Shields (2003) discusses such issues from a Dewian perspective.

> *John Dewey's insights perhaps give us clue into what a leader should not be. Leaders that are fixated in belief systems, unwilling to confront evidence they do not expect, unwilling to listen, and uncomfortable with uncertainty and doubt undermine the formation of a community of inquiry. Further, leaders that adopt a pessimistic attitude foreordain failure. Alternatively, leaders that are unfettered optimists are unwilling to "see" problems or are ill prepared to adjust their approach when negative/unexpected information needs to be processed.*

Others (Oliver and Shaw 2003) maintain that recognized and strong leadership is essential to the success of online education. Leaders can be regarded as central players in an online network but can be effective as either triggers or responders (Aviv et al. 2003). Triggers are participants whose contributions have greater than normal power to invoke responses from peers, for instance a poster may consistently post thought-provoking messages that inspire others to answer. By contrast responders are participants who more frequently than normal answer the posts of others, some leaders may be both strong triggers and strong responders.

While studies of leadership are commonplace in business studies literature (Avolio and Kahai 2003; Barry 1991; Yukl 1998; Zigurs 2003) the study of leadership in online educational communities of inquiry is relatively rare (Heckman and Misiolek 2005). In general, for online learning we are most concerned with emergent leadership (Yoo and Alavi 2004), it is unusual to focus on formal leadership roles as these are infrequently assigned, although leadership of online discussions may be designated to individuals for

specific discussions (Fredericksen et al. 2000; Meyer 2004; Punziak, McMartin and Agogino 2000). A strong facet of emergent leadership seems to be the importance of communications (Carte, Chidambaram and Becker 2006; Heckman and Misiolek 2005; Yoo and Alavi 2004).

Yoo and Alavi studied the performance of US government executives engaged in online learning activities and found that emergent leaders sent more and longer emails than non leaders and tended to perform initiator, scheduler and integrator behaviors. In summary the emergent leaders started the process (or were very near the start) organized activities and assembled individual contributions into a finished product. Interestingly they observed leadership to be highly concentrated in a single individual.

Carte et al. (2006) found that in online educational teams that there was a strong correlation between the display of overt leadership behaviors and high success on group tasks. They characterized leadership behaviors as being those of Innovator, broker, producer, director, coordinator, monitor, facilitator and mentor. In their study they found that high performing teams exhibited significantly more monitor (Collects and distributes information, checks on performance, and provides a sense of continuity and stability.) and producer (Seeks closure, and motivates those behaviors that will result in completion of the group's task) leadership behaviors. Further both concentrated and shared leadership behaviors seemed to be highly correlated with collaborative task success. They also found that

these behaviors emerged strongly during the first half of the groups' lifespan, and stayed throughout the life of the groups, but steadily dissipated in strength over time. (Carte, Chidambaram and Becker 2006)

Heckman and Misiolek (Heckman and Misiolek 2005) studied the issue of emergent leadership in online communities of inquiry. In a study of online task-based teaching they found that patterns of emergent leadership could be described as weak or strong. In strong leadership there was a strong consensus on how many leaders there were and who the leaders were. In weak leadership patterns there would be little consensus on how many and/or who the leaders were. Perception of leadership as measured by a perceived leadership index was highly correlated with the frequency of messages sent by and received by individual group members. This correlation held for all types of message coded, i.e. social (Garrison, Anderson and Archer 2000b), task-process and task-product. They inferred from this that online leaders could perform both social and task based roles together. Those rated by others as leaders showed a stronger belief in their own leadership capabilities but at the same time were not concerned with maintaining group cohesiveness. In teams with strong leadership the leaders both initiated and received more direct messages than non-leaders. This was true for messages that were task-product based or social. In weak leadership teams there was no strong difference between patterns of communication for leaders and non-leaders. In both strong leadership teams and weak leadership teams leaders initiated more process related messages than non leaders. In general terms all but one of their teams adopted a distributed leadership pattern. Haythornthwaite (2002) found different network patterns for different relations in online leaders, suggesting different leaders for task and social exchange (e.g., information vs. emotional support).

A more general question is the extent to which roles either adopted or prescribed impact on collaboration. Strijbos et al. (2005) examined the impact of assigning functional roles (such as planner coordinator, editor and collector) and discovered that doing so increased the level to which communications were more closely task focused, but that it also led to greater collaboration. They also discovered that even when roles were not assigned students would adopt such roles especially planning and editing roles, but crucially these roles tended to be less fixed and more evenly distributed among students, indicating that students may adopt roles as and when required.

2.3 Engagement in online learning

From a constructivist standpoint, we are concerned with how students construct meaning from their environment. To construct meaning it is necessary for students to fully engage with the learning environment. Thus, we are interested in how we can encourage this engagement and we may also wish to investigate the nature of engagement. Which is all too frequently regarded as a purely cognitive activity (Chappel et al. 2002; Kyza, Golan and Reiser 2002) or a purely individual activity (Entwistle 2003) or when the term social is added is often represented purely as a alternative term for socializing (Goldman 196) Engagement in online learning under a constructivist paradigm is assumed to involve mutual socio-cognitive aspects (Barron 2003; Brown 2001; Kling and Courtright 2003; Smith and MacGregor 1992) but may sometimes be an artifact of a simple connection to the learning materials (Conrad 2002). If encouraging and maintaining engagement is important, how would we know if we have achieved it? Many current studies of engagement tend to be superficial, for instance focusing on messages posted, time spent on a course or number of log-ins (Miller, Rainer and Corley 2003; Shin and Chan 2004),

or simply talking about high levels of engagement without specifying how these may be assessed. Relatively few studies (Pawan et al. 2003; Rahikainen, Lallimo and Hakkarainen 2001) examine engagement as some form of critical inquiry, though these are still focused on simplistic well bounded problems . Few papers (LeBaron and Santos 2005) even suggest that examining inter-student dialogue is important. Barron (2003) suggests that we would see it in intensive emotional displays, persistence in having their ideas heard, we may also observe it in the appearance of students simply paying attention (Koory 2003) or may construct elaborate schemes for measuring engagement in terms of use of a learning system(Chan, Lam and van Aalst 2003) or with qualitative content analysis (Rahikainen, Lallimo and Hakkarainen 2001). There are few clues as to how we may predict factors that will encourage engagement, Miller et al. (2003) found that elements of a Technology Acceptance Model (perceived usefulness, and ease of use) could predict the extent to which students participated in an online course but this only addresses time spent online not measures of the quality of student engagement. Harris et al. (2004) suggest that students feel a sense of control is important to their engagement but this is based on self –response and not correlated with empirical results.

Part of the problem of engagement at least appears to be creating the conditions where there is a suitable challenge for students. Csikszentmihalyi (1975) argues that there is a "flow" channel where individuals are intrinsically motivated to participate. When challenge and student capability are balanced students are said to be in a "flow" channel of enjoyable activity. If the degree of challenge and skill are too low, apathy occurs. If the challenge is too far above their skills and expertise, they perceive the activity as hard work. Engagement in learning seems to require problems that draw upon students'

existing skills or expertise but that also present a sufficient challenge to move students from the "flow" channel of to a mode where they engage with learning to construct their own meaning. The received wisdom is that students who participate at a token level do not benefit from the presence of the learning community and so continue employing less effective models and practices that result from their individual, prior experience (Lipman 1991).

There are concerns that engagement in technology supported learning may be impeded by the rich Information and communications technology intended to support it., Gay and Hembrooke (2002) describe how having multiple task streams available significantly degrades learning performance by students having divided attention.

Kappelman and McLean (Kappelman and McLean 1992), distinguish different levels of engagement by users involved in systems development. They describe these as participation and involvement. Participation is defined as the observable behavior of individuals in a collaborative process, being present. Involvement by contrast is seen as a state of psychological identification with an object to the extent that it is regarded as important and individually relevant (Kappelman and McLean 1992). Kappelman and McLean define engagement as a superset of participation and involvement. The polar opposite from even Kappelman and McLean's' most minimal position would be the theory of the Vicarious learner (Cox et al. 1999; Dineen, Mayes and Lee 1999; Stenning et al. 1999). In this theory intricate collaborative knowledge building is going on and students are highly engaged in the process, but not all of them, for some students observing and reflecting on the knowledge building process is a good proxy for being

part of the construction itself and certainly superior to merely reading texts. Vicarious learning differs from lurking (Preece and Nonnecke 2001) in that whilst lurkers choose to be at the fringes of a community for various reasons the vicarious learners were required to merely observe rather than take part actively. Similarly, they could not be considered legitimate peripheral participants (Lave and Wenger 1991) since there was no requirement that they would join the specific active community of learners they were observing even if they would at some time be part of a different community.

2.4 Community of Inquiry

The concept of a community of inquiry has its roots in pragmatism, the only truly American school of philosophy. From the late 1800s Pierce (1868), Dewey (1933), Addams (1930) and others grew dissatisfied with the reluctance of scientific professionals to consider evidence that contradicted their beliefs (Shields 2003). They developed a philosophy of inquiry. In this vision inquiry was an essentially collaborative activity building upon the multiple perspectives of its contributors (Dewey 1916).

> *There is a community engaged in inquiry. Inquiry is an open-ended process with positive feedback*

This characterization of a participatory democracy is evident in many modern streams of educational thinking including CSCL research and constructivism in general.

This philosophical approach has informed the research of several educational researchers and psychologists. Researchers interested in online learning have adapted this approach. One interesting conceptualization of the community of inquiry can be found in the work

of Garrison, Anderson and colleagues (Anderson and Elloumi 2004; Garrison 2003; Garrison, Anderson and Archer 2001). This conceptualization emphasizes the importance of three different presences required for a community of inquiry, namely social, cognitive and teaching. The three presences indicate support for cognitive, social and teaching activities.
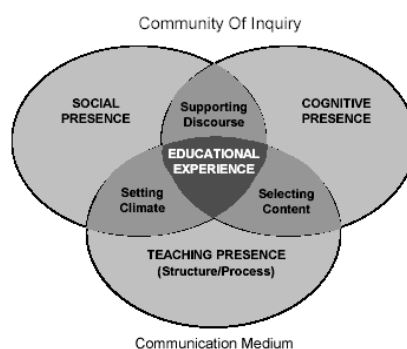
Figure 2.1 Community of Inquiry

Cognitive presence is seen as the key to success. Garrison and colleagues describe this as "the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication" (Garrison, Anderson and Archer, 2001, p.10). Social presence refers to the ability of learners to project themselves into the community, the ability to make them appear as real individuals. This is seen as a support to the cognitive presence. Finally, teaching presence reminds us that there must be some content and process including facilitation. This final role is typically addressed by teachers, though it may be performed by any participant.

Figure 2.1 above shows the intersections among the various presences. To support
discourse requires both cognitive and social presences. If students feel either a lack of
ability to create meaning (cognitive presence) or to engage with a community (social
presence) then discourse will not happen. To create a suitable climate for discourse
requires the feeling of being part of a community (social presence) and having a suitable
teaching infrastructure (teaching presence). The selection of suitable content supports the
collaborative construction of meaning (cognitive presence) and supports the teaching
process (teaching presence). When all three presences exist then a positive educational
experience can ensue.
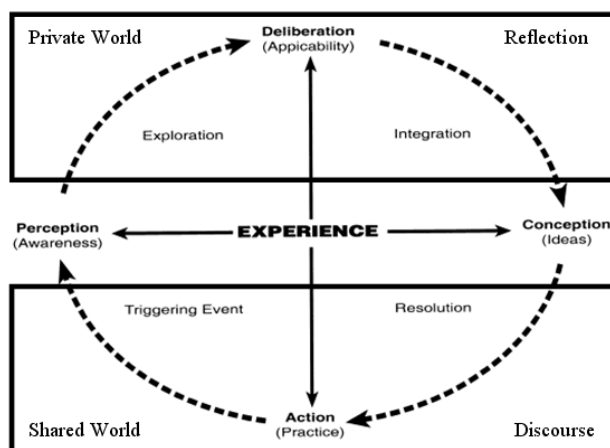
Figure 2.2 Inquiry Model (Garrison, Anderson and Archer 2001)

In Garrison's critical inquiry model Community members move between internal
reflection and external debate in an iterative cyclical process.

2.5 Role-behaviors

In a 2005 study Waters and Gasson (2005) used Garrison's community of learning framework (Anderson and Elloumi 2004; Anderson et al. 2001; Garrison 2003; Garrison, Anderson and Archer 2000b) as a starting point to examine behavior in an online communities of inquiry in terms of engagement, leadership and collaborative learning. They performed a post-hoc content analysis of the online discourse of an online graduate information systems degree course at a North American University.

The study analyzed messages posted to a course discussion board by students enrolled on a Management of Information Systems course. Through an analysis of the content of student discourse they derived patterns of role-behaviors, engagement and leadership behaviors that went beyond the Garrison framework and seemed to impact on the online learning experience. It was clear that the Garrison framework was insufficiently nuanced to describe the variations in the interaction behaviors taking place in online discussion.

2.5.1 Role-Behaviors

Using Content Analysis (Babbie 2001) Waters and Gasson (2005) derived a number of role-behaviors that individual students exhibited in the discourse. Students could exhibit a variety of role-behaviors depending on circumstances.

Table 2.1 Role-behaviors in a community of inquiry

Role-Behavior	Analogy	Main Behavior Types (Garrison, Anderson and Archer 2000a)
Initiator	Spider	Social
Facilitator	Middleman	Social, Teaching
Contributor	Journeyman	Social, Cognitive
Knowledge-elicitor	Seeker	Social, Cognitive
Vicarious-acknowledger	Me-too	Social, Cognitive
Complicator	Reframer	Teaching, Cognitive
Closer	Synthesizer	Social, Teaching, Cognitive
Passive-Learner	Freeloader	Cognitive

2.5.1.1 Initiator

An analogy for this type of role-behavior is that of a social spider: someone who sits at the center of a web of social connections. Messages sent out are primarily social and often unrelated to the work in hand, to set up and to maintain a social network of people who would recognize the student as someone with whom to interact. The Initiator role-behavior appears to look for points of connection, where no obvious connection exists, someone exhibiting this role-behavior may simply comment on another participant's background and ask general questions. This is not necessarily a purely selfish action, as it frequently draws participants out into the community.

> *"Hi, XXXX. If your contributions to the XYZ class discussions are any indication, I think you'll be giving the class a few things to think about, as well. Good to see you back!"*

2.5.1.2 Contributor

Students exhibiting this role-behavior tend to project their identity through their messages and to add their view on the existing debate, but do not change the nature of the debate. They appear to be fulfilling their contractual obligation to contribute. They may give examples from their own experience, but these are brief and more often they just quote examples from course readings to support their position.

> *"I do agree that there are portions of IT which have already been*
> *commoditized. Several of these have been mentioned in other postings*
> *and in Carr's article (storage, networks etc). In fact, in Champy's rebuttal*
> *he concludes that 'IT will eventually become a commodity' ."*

2.5.1.3 Facilitator

Facilitator role-behaviors are intended to draw out further debate on a question, and gets things moving by throwing out community-oriented questions, such as "how would this happen?", or "I disagree with XXX but what do you think?". These role-behaviors often resolve external or logistical problems for other students, moderate discussions, warn the community when a debate is wandering off topic, or actively acknowledge other students' contributions. Such role-behaviors often acknowledge good ideas from participants and discuss how these can be used and may also expand others' examples, by providing further insights along the same lines.

> *"Fred, I like your definition of a commodity. I think that the Microsoft*
> *suite of applications, the operating system, Word, Excel, PowerPoint,*
> *Outlook, have become the commodity standards in the industry, for the*
> *most part."*

2.5.1.4 Peer-Knowledge-elicitor

This role-behavior indicates that a student is seeking information from their peers about what to do, what something means, how to approach a task or for feedback on their contributions.. This role-behavior is often exhibited as requests for advice or explication about the current task.

> *"Can somebody please tell me which diagram we have to create for this week's assignment is it the ERD or the ELH diagram, thanks."*

2.5.1.5 Vicarious-acknowledger

This role-behavior demonstrates recognition that someone else's contribution influenced the participant's perspective (positive or negative) but does not use this to advance the discussion.

> *"I completely agree that any communication to high level management (especially the CEO!) needs to be very clear and succinct. I am a bit concerned that a single spaced two-page memo can be brief or succinct."*

2.5.1.6 Complicator

Complicator behaviors reframe or redefine an existing position. This can be a response to an initial posed question or a response to someone else's response to the question. These messages can suggest alternative perspectives, point out inconsistencies in arguments, provide alternatives or alternative approaches and show complications that arise form an approach.

> *"That is not an easy question. It depends the business model and the impacts of IT on such models. If IT is restricted to general support then IT doesn't matter. If IT could change from the back office support to reshape the entire business then IT does matter."*

2.5.1.7 Closer

This role-behavior is exhibited as an attempt to synthesize or pull together a final or coherent answer to the question. Such role-behaviors often act to bring a debate to a conclusion or reconcile differences and combine threads of arguments.

> *"Just ask Wal-Mart, UPS, Amazon, Ebay or even Xerox and Apple if it really matters. All of these companies are continually attempting to innovate current technology to develop an edge over their competitors. Even though Apple & Xerox are currently minor players in their fields, as long as innovation continues to drive IT forward, they could be at the top of their class 10 years from now.; In my opinion, IT, science and medicine will never become commodities. All three will continually progress forward and will always truly matter."*

2.5.1.8 Passive-Learner

This role-behavior is characterized by little or no overt posting activity. Students exhibiting this role-behavior basically add little to the community. They make minimal contributions and providing little or no projection of self into community. Students exhibiting this role-behavior may learn vicariously (McKendree et al. 1998) or may bring learning from the online community into the real world. However, in terms of community participation, there is little evidence of their presence or their learning.

Waters and Gasson (2005) found that patterns of role-behaviors could be highly fluid. On an individual basis, a student could adopt a number of different role-behaviors. This role-behavior profile might change from week to week. For example, a student may contribute to lively discussion one week by facilitating, complicating or closing. The following week the same student may be content to simply post the minimum required contributions with no intent of stimulating debate. Students appeared to exhibit different

role-behaviors when members of the community were not heedfully interrelating or actively building a collective view (Weick and Roberts 1993), but were focusing on external (to the community) problems or individual priorities.

2.6 Patterns of Engagement

Waters and Gasson (2006) in a later study also extended Kappelman and McLean's (1992), model that showed different levels of engagement by Individual users in systems development, they found that this did not adequately account for behaviors found in a socially-situated environment. That is to say there was a level of engagement that seemed different from either participation or involvement. Thus, Waters and Gasson (2006) used the term social engagement to denote active commitment to the social facilitation and direction of the community learning process. This Social Engagement appears to be a level above involvement. Each construct builds on the previous one. Learner involvement requires participation plus psychological identification with the object of the learning process, while social engagement requires learner involvement plus active commitment to the facilitation and direction of community processes.

Table 2.2 Levels of engagement in a learning community (Waters and Gasson 2006)

	Form of Learning	Observable Activity	Predicted Outcomes
Participation	Individual internalizes a professional reality reflected in these materials and articulates this to the community.	Behavior that denotes interaction with course materials rather than community, through passive contributions.	Superficial learning, that results from the acquisition of terminology and content-led professional domain definitions of knowledge.
Involvement	Individual develops their own understanding by translating community knowledge to a professional knowledge-domain, internalizing how this knowledge applies, and externalizing the resulting learning back to community.	Behavior that indicates the active application of community perspectives to individual's professional experience.	Contextually-situated learning, that results from the active construction of knowledge through internalizing perspectives from the learning community and externalizing the resulting knowledge. This is equivalent to a single cycle of knowledge-construction..
Social Engagement	A sustained learning process in which individual engages with repeated cycles of translation-internalization-externalization to develop their own and the community understanding.	Behavior that indicates proactive commitment to the facilitation and direction of a *sustained* learning process.	Sustained, internalized, and articulable learning, that results from the active co-construction, debate, testing, and development of knowledge in collaboration with peer learners.

Waters and Gasson (2006) posited that individuals participating in a community of inquiry will behave in a manner dependent partly on their prior experience, their expertise in a knowledge domain, their ability to translate knowledge acquired in one domain into another domain (Wenger 1998), their motivation and the nature of the problem domain.

> *Learners may behave as a subject expert where they have relevant experience of similar problems, they may question and negotiate assumptional frameworks and norms, and they may adapt and co-construct new forms of combinatory knowledge as a community. Or they may conclude that they have no relevant expertise and observe how others resolve the problem. Findings from our previous work would indicate that shared expertise is not always available or accessed in all learning stages and that some modes of discourse demonstrate an individual or a group focus to achieve very different ends.* (Wenger 1998)

By visually mapping the patterns of messages Waters and Gasson (2006) noticed these different levels of engagement shown in the differences in interactions between students participating in online discussions. In the following diagrams the lines between nodes (S8, S7 etc.) show the discussion board messages which were direct discussion board

replies addressed to specific individuals. The arrow head represents the recipient (e.g.

S21 in Figure 2.3 sent one direct message to S12) and the thickness of the line represents

how many messages passed between the pair. A line with arrows at both ends indicates

messages passing in both directions.
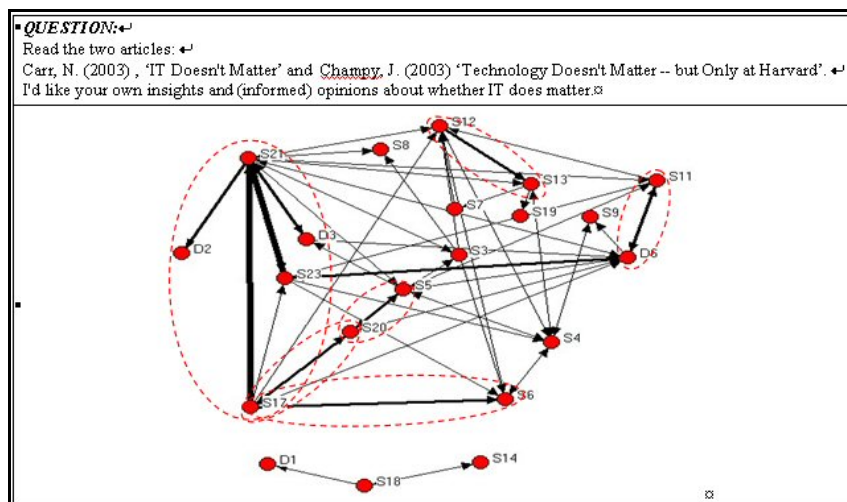
Figure 2.3 Social Engagement (Waters and Gasson 2006)
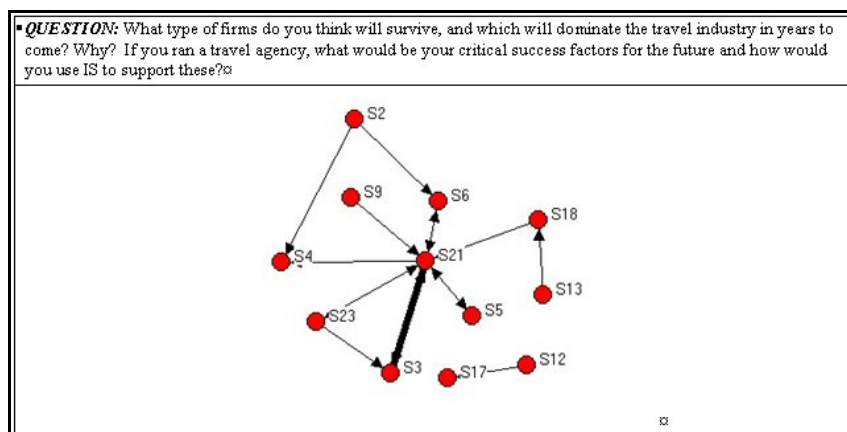
Figure 2.4 Involvement (Waters and Gasson 2006)

QUESTION: How do we plan to use IS, taking into account business pressures, organizational responses and supporting critical response activities? What are the most critical things to consider, in planning for IS? What issues and elements have caused you problems, because you failed to anticipate them? When discussing this, think especially on the distinction that I made between IT systems and Information Systems in the lecture notes.

Figure 2.5 Participation (Waters and Gasson 2006)

The social engagement discussion (Fig 2.3) shows extended interchanges between participants in response to the question "Does IT matter?". There are multiple messages passing between individuals and a network of messages in which participants respond to several others' messages. A pattern of repeated cycles of internalization and externalization is exhibited here. Learners are reading each others' posts, reflecting on them and responding to them; these responses themselves cause reflection and response. Fig 2.4 by comparison shows a pattern of involvement. There are few cycles of internalization and externalization and the pattern of responses between individuals is much narrower. In this case students seem content to perform a single reflect-post cycle. Finally, Fig 2.5 shows a minimal pattern of participation. The node at the center of the network [A, for all] indicates that participants have broadcast an answer to all students, without reference to other individuals' contributions. There is almost no interaction between participants and no apparent pattern of internalization and externalization cycles. Many students made no postings at all.

2.7 Leadership Behaviors

Waters (2006) also examined the relationship between the type of student contribution to an online discussion board and extent to which postings were attended to and responded to. It appeared that the degree to which students adopted differing role-behaviors had an impact on the degree to which their contributions were attended to and responded to (Waters 2006).Volume of contributions did not appear to be highly correlated with higher response rates. Similarly, the length of an individual contribution was not highly correlated with the level of response that it evoked. When it came to identifying the most attended-to posters the situation was complex.

1) The more posts a student made the more overall responses they received, but the average number of responses/post showed no strong relationship to post frequency. The Highly read/responded to posters were posting at or around average frequency or even a little below.
2) Early posts did get more responses, but only ¼ of the most highly read posters were early posters.

An examination of the nature of posts for the students who were most or least highly read showed some differences. Waters (2006) isolated the four most frequently read posters and the four least frequently read posters. The system recorded whenever a message was opened for viewing.

Table 2.3 Thought-Leaders and frequency of message reads (Waters 2006)

Most frequently read particpants

Participant	Messages	Reads	Reads per message
11	56	1217	21.73
13	62	1245	20.08
3	27	525	19.44
20	30	517	17.23

Least frequently read particpants

Participant	Messages	Reads	Reads per message
14	33	400	12.12
19	21	273	13.0
17	66	863	13.08
5	59	788	13.36

These most frequently read participants posted a higher percentage of facilitating messages; this represented approximately 39% of their contributions. The average percentage of facilitating posts for the least frequently read posters was 23%.

Waters found that Complicator behavior was important to maintaining debate. Examining Table 2.4 below shows how crucial the Complicator role-behavior was to maintain debate in a discussion thread.

However, the community-of-inquiry model is based on a model of participatory democracy (Dewey 1916). Thus, there seems to be a tension between the need for Thought-Leaders, which we might regard as a kind of benevolent oligarchy and the need for democratic participation and the exchange of multiple perspectives. This suggest that the 'democratic' aspect of Dewey's version of a Community of Inquiry might show some resistance to more speculative new ideas from powerful central figures.

Table 2.4 Discussion Thread showing the effect of Facilitation and Complication

The value chain model doesn't fit today's business model... The correct sequence should put marketing and sales in the first place. Manufacturing, storage, distribution should rely on customer orders. ...	S4	All	Contributor
The value chain bugged me, too, when I first read it. On reading it again the light dawned. The text is only showing one version of the value chain, when in fact there are several. Which one is applicable to a business depends on their business model. ... I am most familiar with engineer-to-order (ETO) which is is generally for very large, expensive, and one-of-a-kind items like ships, communications satellites, and power plants... ETO is characterized by long cycle times (surprise!) and many component parts are not procured until the design is nearly complete. For ETO I would definitely place "Design" as a primary value chain activity (rather than secondary as part R&D). "R&D" is TOTALLY separate from design - R&D involves discovery of new design techniques, design for a customer order uses already proven techniques. In any case I am not sure why they list "Procurement" as supporting and "Inbound logistics" (what I'd call "receiving") as primary. But in my ETO world parts are mainly purchased for a specific sale, so that is why I see it as part of the value chain.; Maybe the text covers this stuff later on, but I didn't see it so I thought I'd throw it out there.	S11	S4	Complicator
I just showed my value chain bias too - I only talked about models that create a product. I imagine there are a whole 'nother set of v-c.'s for companies that provide services in different ways.	S11	S4	Peer K. Elicitor
I think it is also difficult to understand the value chain because we are reading it from a static standpoint. Depending on what phase the product is in, i.e. is it new and the first batch is being processed, has it been around for a while. I would certainly like to see #4, Marketing & Sales to be first or second. If initial market studies were unfavorable and potential customers did not respond favorable to my product, I certainly would not want to invest heavily in the incoming materials. I think this is where we could begin to look at IS in assisting with our supply chain.	S12	S11	Complicator
I agree with S12. Product maturity is not so relevant in an ETO world because most end items are built only for one sale. But in a typical retail world I can see how there would be differences based on product maturity.; The text's value chain almost looks like it is for a brand new product ...	S11	S12	Vicarious Acknowledger
I have to go the other way. To me, the text's value chain seems best suited for an established product. As others have observed, there is no initial step where the need for the product is determined. That seems to imply a known demand that is being met. ... S11 made some great points about different delivery processes. I think this model could be used for all of those.	S13	S11	Facilitator
This is really great, S11! I have often struggled myself to define variations on the value-chain, but I came back to one or two: as an instructor I have to try to be "generic". But I am *more* than happy to have a discussion of business model variations on the value-chain, within your assignments(!)	Instr	S11	Peer-Acknowledger
I've been doing some thinking in this area. Education is different in many respects from manufacturing. ... I got the sense that there is a kind of chicken/egg thing going on with the value-chain model. Without sales there is no need for inputs, but without manufacturing, etc. there is nothing to sell. Unless products are marketed, there is no sales. So it's circular.	S9	I	Closer

Table 2.4 shows a sequence of interactions from a well developed sub thread. This shows how knowledge was co-constructed through student debate around a working theory. A student was inspired by a broadcast message and responded with a development of the first student's argument that attempted to re-interpret the terms of the debate. The fourth poster also attempted a reframing action that generated interactive debate leading to community knowledge construction. Later a facilitator role-behavior advanced the debate re-iterating and drawing attention to previous important contributions. In an analysis of sub-threads it was shown that no well developed sub-threads were formed without the presence of Complicator and/or facilitator role-behaviors.

Waters (2006) also found evidence to suggest that initiator role-behaviors were important from both a social and socio-cognitive perspective. The initiator role-behaviors aimed to draw participants into debate by homing in on connections between cohort members and presenting an initial stance on a problem. Some participants were clearly skilled at this activity and were able to generate commitment from other members.

Waters refer to the participants who frequently performed these (initiator, facilitator, Complicator) role-behaviors as Thought-Leaders concluding that without their active participation the online discussion tended to be direct responses to faculty questions and linear threads. When Thought-Leaders were involved threads became deeper and more involved.

These last studies seems to suggest that there are quantifiably different levels of engagement, that Thought-Leaders may behave in definably different manners, that discourse without such core participants tends to be flat and linear and that peers quickly and respond differentially to core participants.

This, however, is suggested and not strongly validated by research. This research is limited both by the small single sample. It was by no means clear that a similar pattern of student role-behaviors would be found with a larger or different sample or with a different knowledge domain. Similarly, these studies did not investigate any relationship between role-behaviors and the perceived impact that students had on others in the learning environment. Similarly, the Waters study (2006) took a single measure of Thought-Leader behavior gauged by attention to student discourse. This is a crucial

measure but there are other elements of student behavior that may be indicative of

Thought-Leaders, these include social engagement behaviors.

3. Chapter 3: Research Questions and Methodology

The above review of the relevant literature forms the background for this research. The related threads of collaborative knowledge building, social engagement and participant role-behaviors come together in my research framework.

3.1 Research Contribution

This research was intended to fill some critical gaps in our state of knowledge with regard to student behavior in online learning environments. Each of the elements covered in the literature review (role-behavior, engagement and leadership behaviors) has been addressed to some extent. At present however we lack an integrated view of how these crucial elements are related. The evidence for the impact of these elements is often tentative and limited by small studies. There has been little substantive research on the effect of Thought-Leaders in online learning; similarly, there has been little serious focus on the issue of student engagement, its precursors and how it can be successfully fostered. Why are some individuals deemed more important even if they apparently behave no differently from others? Research on the effect of student role-behaviors and Thought-Leaders has shown some interesting findings and some tantalizing glimpses of relationships but these are exploratory at best. It was considered valuable to discover if these findings show any commonality in different settings with different students and different knowledge domains. It is by no means clear that a similar pattern of student role-behaviors would be found with a larger or different sample or with a different knowledge domain. Findings on student role-behaviors and its connection with student Thought-Leaders is similarly, scanty. There are some interesting case studies but these

are largely not validated. In my research I used use several different samples and knowledge domains and examined elements of student behavior that may be indicative of Thought-Leaders, these include social engagement behaviors, role-behaviors and the relationship between these elements. I felt that this would be a vital contribution to our understanding of the relationship between student behaviors and knowledge building. By addressing the limitations and gaps in knowledge I hoped to be able to increase our understanding of how these mechanisms operate. I felt this to be crucial both to our understanding of online learning and will provide valuable insights with regard to how to foster online learning via asynchronous discussion boards.

3.2 Research Questions

RQ1. To what extent do student behaviors (role-behaviors and social engagement) affect quality of online discussion?

RQ2. To what extent do student behaviors (role-behaviors and social engagement) affect learning outcomes?

RQ3. To what extent do student behaviors (role-behaviors and social engagement) affect learning satisfaction?

RQ4. To what extent do student behaviors (role-behaviors and social engagement) concord with perceptions of students as Thought-Leaders?

RQ5. Does the perception of presence of Thought-Leaders affect student perceptions of quality of online discussion?

RQ6. Are there any common factors that identify Thought-Leaders?

3.2.1 Thought-Leaders

In this research I am drawing a distinction between participants chosen by their peers as Thought-Leaders, and participants who can be judged objectively to be more important in promoting discussion. These two groups may or may not overlap.

Thought-Leader status as a measure of student perceptions is assessed by the extent to which peers nominate a person as being one of the most influential participants in the discussions.

Objective measures will include how frequently participants start discussion threads, how much participants contribute in discussion threads and how much they inspire others to contribute in discussion threads. These objective elements allow us to examine core participants as Leaders both by virtue of being strong triggers or responders, i.e. by contributing or inspiring others to contribute.

The following section describes the concepts that were being studied. The ways in which these concepts were formally operationalized will follow in a later section. The purpose

of this section is to give the reader a snapshot view of the relevant concepts, which were

covered in earlier sections and prepare the reader for the later sections which will provide

more detail as to how they were assessed. Sections 3.5 and 3.6 describe in detail how

these elements are operationalized, i.e. how the broad constructs were explicitly

translated into variables which could be directly measured.

3.3 Elements being studied

- Role-Behaviors
- Social Engagement
- Quality of online discussion
- Learning outcomes
- Learning Satisfaction
- Student perceptions of others as Thought-Leaders
- Student perceptions of their own contributions
- What reasons did students give for regarding peers as important to discussion
- Characteristics of Thought-Leaders

3.3.1 Role-Behaviors

This refers to the nature of the content of individual contributions according to the Waters

and Gasson scheme. Student contributions can demonstrate many behaviors. At the

lowest levels these can range from simple "me too" responses to question-asking, to

personal anecdotes. The ones I was most interested in are behaviors that can facilitate

debate, reframe debate or complicate debate, or synthesize a conclusion by reconciling

different perspectives. The Waters and Gasson scheme was used due to its ability to

discriminate between a wide range of socio-cognitive and pedagogical behaviors. The

scheme seemed to represent a fine-grained method of examining the interactions between

different types of recognized elements deemed to be important to both collaborative

knowledge building and having connections to various kinds of leadership characteristics

also deemed important to collaborative learning.

It is important to understand that role-behaviors are not synonymous with roles. A role-behavior is a particular type of behavior that a student exhibits in a specific context, it does not define a consistent pattern of behavior, nor does it imply a fixed adoption of a role in a discussion. Waters and Gasson (2005) stress that these role-behaviors are fluid and highly contextual.

3.3.2 Social Engagement

Students can show differing levels of engagement with a collaborative learning process. This varies from no apparent commitment to deep commitment to an iterative group knowledge building process (Social Engagement). This Social Engagement is indicated by iterative (multiple) interactions by one or more students in a deepening discussion thread branch. When students revisit the same discussion sub-thread multiple times, they are showing a commitment to refining ideas and developing themes in collaboration with peers and showing cycles of internalization and externalization. This effect is especially strong where several students choose to develop a sub-thread by participating in deeper levels of discussion. An example of such deepening inquiry via an iterative branch is shown in Figure 3.1 where multiple students are repeatedly returning to and refining ideas presented in a branch of a discussion thread.

Formal Methods S20 2/12/08 7:25 PM
   Re: Formal Methods   S17 2/12/08 7:49 PM
      Structured methods   S14 2/12/08 9:34 PM
         Re: Structured methods S17 2/13/08 1:05 AM
            What is the difference… S14 2/13/08 9:16 AM
               Forms and reviews S20 2/13/08 12:07 PM
                  Re: Forms and reviews S14 2/14/08 2:08 AM
                     Re: Forms and reviews S17 2/14/08 1:42 PM
                     Milestones S20 2/15/08 3:33 AM

Figure 3.1 An Iterative Branch or deepening sub-thread

3.3.3 Quality of online discussion

Online discussion can be characterized by both the content of individual contributions and by the richness of interaction between participants. Contributions that show that participants have applied thought to a problem and not merely posted a contractual obligation are valuable. Similarly, patterns of interactions that show that participants are actively responding to, acknowledging, critiquing or building on each others contributions show that some attempt to move a debate along is taking place. Quality will also be assessed by objective measures such as the number of messages in a thread, the number of participants in a thread (how many students are being activity drawn into the discussions), the maximum depth of a thread (how deeply are ideas revisited), the length of a thread in segments which represent a measure of the number of different coherent ideas presented and how often a thread branches into deeper explorations of ideas.

3.3.4 Learning Outcomes

Online discussion contributions exhibit evidence of learning outcomes. Specifically we can examine the cognitive dimension of the contributions, this can vary from simple recitation of facts (remember), through understanding, application, analysis, evaluation to building new hypotheses or plans of actions (create). I decided to use Anderson and Krathwohl's cognitive schema from their taxonomy of learning teaching and assessing as this is a highly validated schema.

3.3.5 Learning Satisfaction

Student satisfaction is regarded as a key measure of success, thought this often does not have any clear relationship with other performance measures. Student satisfaction with the online learning was assessed subjectively via an end of course questionnaire.

3.3.6 Student perceptions of others as Thought-Leaders

Student perceptions and Instructor perceptions offer differ. Similarly, objective measures of key participants such as frequency of posting may not agree with student opinions. I examined the extent to which students that were perceived as Thought-Leaders could be differentiated from non Thought-Leaders.

3.3.7 Student perceptions of their own contributions/learning

Students' perceptions of the quality of their contributions may not match with other measures of performance. Students' own perceptions were assessed using an end of course questionnaire.

3.3.8 What reasons did students give for regarding peers as important to discussion

Students frequently volunteered information as to why they considered specific peer as having greater importance in the discussion boards. An analysis of student answers uncovered a number of strong common themes which could be linked to other measures such as demographics and content analysis of messages.

3.3.9 Characteristics of Thought-Leaders

This study examined which characteristics are most closely associated with participants both chosen as Thought-Leaders by peers and objectively judged to be most influential. These characteristics will include demographics, experience, attitudes and role-behaviors. Waters and Gasson (2006) consider those most frequently performing Facilitator and Complicator role-behaviors to be Thought-Leaders, this study investigated this proposed relationship.

3.4 Methods

IRB approval for the protocol was sought and granted in Fall 2007. The protocol allowed the use of anonymised discussion board data and other student data that would normally be captured as part of the system as long as it was anonymised and could not in any way be used to identify individuals or cause harm in any way. Data collection began in January 2008 and continued until the end of March 2008. Analysis proceeded from April 2008 until July 2009.

3.4.1 Subjects

The subjects were students taking ten graduate online courses at a North American University. A total of 239 students took part in the ten classes, 60% were female and 40% were male. The average age of students was 31.47 (maximum 57, minimum 21). The average number of prior courses taken within the knowledge domain was 11 (maximum 25, minimum 0), the average number of online courses taken beforehand was 5 (maximum 25, minimum 0), the average amount of professional domain experience was 6 years (maximum, 25 years, minimum 0 years) and the average amount of total professional working experience was 7 years (maximum 35 years, minimum 0 years)

3.4.2 Courses

The 10 classes consisted of five sections of Information Systems classes (IS-1A, IS-1B, IS-2, IS-3, IS-4) four sections of Library Science classes (LIS-1A, LIS-2A, LIS-2B, LIS-2C), and one section of a class that merged Information Systems and Library Science material (COM-1A). Courses we chosen on the basis of the possibility of producing lively debate and covered a wide range of material basic and advanced, theoretical, pragmatic, social and ethical. Courses chosen were run by instructors who strongly felt

that online discussion boards were a powerful tool for online learning and who were committed to using discussion boards for learning.

3.5 Procedure

3.5.1 At the beginning of the course

Students from the listed courses were asked to fill in set of questionnaires one at the start of each course and one to be completed at the end of the course. Participation was voluntary and students received no reward for participation and no penalty for non participation. It was made clear to students that no identifying data would be disclosed and that the only personal data collected would be name, age and ethnicity all of which would be simply aggregated and all data would be anonymised. All other identifying data such as employer/location was also anonymised. It is not possible for anybody external to the course to identify any individual. As the courses are password protected no external individuals will ever have access to student contributions.

Students were informed that anonymised data from discussion board transcripts would be used for research purposes.

3.5.1.1 Pre-course questionnaire

1. What is your general background and what was your undergraduate major?

2. Where do you work, what is your job title, how long have you been working for this company?

3. Tell us a little about your professional work history:
- What industry sector do you currently work in and how long you have been working in it?
- How many years of work experience do you have in total? Are they all in the same field?
- Have you changed career or are you planning to change career?

4. Do you have any experience of this topic area ?

6. How many online courses have you taken prior to this one (at Drexel and elsewhere)? Do you prefer online learning to face to face learning? Why? Which was your favorite online course and why?

7. Why did you enroll for the Drexel Masters - was it to change career, get a promotion, or some other reason?

8. What would you like to get out of THIS course?

9. An important part of this online course is a weekly question-driven discussion board. Do you enjoy collaborating in online discussion?

10. What is your age range?
_ 18 – 22   _ 23 – 30   _ 31 – 40   _ 41 – 50   _ 51 – 60   _ 61+
_ I prefer not to say

11. The questions pertaining to gender and ethnic origin will be used for statistical purposes only.
Gender:
_ Male
_ Female

Ethnicity:
_ Caucasian
_ Black not Hispanic
_ Hispanic or Latino
_ Pacific Islander
_ Native American or Alaskan
_ Asian
_ Other

3.5.2 During the course

There were no interventions during the first nine weeks of the course. Student

contributions to the discussion board were captured automatically by the online learning

system (Blackboard).

3.5.3 At the end of the course

In the last week of the course students were asked to complete a second short

questionnaire. Again participation was voluntary with no reward for participation and no

penalty for non participation. This questionnaire asked students about their experience of the course (learning and satisfaction), how much they believed they contributed to the course discussion and who they felt were the most important contributors (excluding themselves).

3.5.3.1 Post-course questionnaire

1. My expectations for this course were met

Strongly Agree -   Agree -   Undecided -   Disagree   Strongly Disagree.

2. Overall I was satisfied with this course

Strongly Agree -   Agree -   Undecided -   Disagree   Strongly Disagree.

3. I found the online discussion board to be a valuable part of this course

Strongly Agree -   Agree -   Undecided -   Disagree   Strongly Disagree.

4. The online discussion contributed to my having a greater understanding of the topic

Strongly Agree -   Agree -   Undecided -   Disagree   Strongly Disagree.

5. I frequently found myself in a strong leadership role in the online debate

Strongly Agree -   Agree -   Undecided -   Disagree   Strongly Disagree.

6. Apart from yourself who else did you feel were the most important contributors to the online debate, please rank the best (2- 5) contributors(*)

* - Answers to this question will be anonymised

3.5.4 After the course

Once the online courses had finished the data was collected and anonymised. Anonymization involved creating a legend which replaced student names including short forms/nicknames with a randomly assigned alphanumeric key.

First	Second	Short Form/Nickname	Key
Tim	Walton	Tim	S1
Bob	Smith	Bob	S2
Tony	Clark	Tony	S3

Figure 3.2 Typical Legend for anonymising student data

The legend for each course was used to create a separate Microsoft Word macro. Each macro contained a set of specific "find and replace" commands which found every occurrence of every student name including short forms and nicknames and replaced it with the assigned random identifier.

The Anonymising macro for each course was run for all collected data for each course (questionnaire and discussion board).

For each week of discussion board data two sets of files were created. The first set of files showed the outline of each discussion board thread i.e. the pattern of messages posted including the sender and date/time of the post and its position in a thread and which (if any) message it was a response to.

Message Title/message poster/date/time	Message Number
County Library S20 2/7/08 12:27 PM	[1]
RE: County Library S7 2/8/08 4:51 PM	[2]
RE: County Library S20 2/9/08 12:27 PM	[3]
RE: County Library S6 2/8/08 11:37 PM	[4]
RE: County Library S8 2/10/08 11:11 AM	[5]
RE: County Library S13 2/10/08 6:39 PM	[6]
RE: County Library S20 2/11/08 7:28 AM	[7]
RE: County Library S7 2/11/08 11:39 AM	[8]
My final ERD S20 2/12/08 1:26 PM	[9]
RE: My final ERD S7 2/13/08 11:53 AM	[10]
RE: My final ERD S20 2/13/08 1:17 PM	[11]
RE: My final ERD S15 2/13/08 6:03 PM	[12]

Figure 3.3 Example of a thread outline

In the outline example above each line shows the following information:
- The title of the message (e.g. "County Library")
- The originator of the message (e.g. S20)
- The date and time that the message was posted (e.g. 2/7/08 12:27 PM)

The codes S20, S7, S6 and so on represent anonymised student identities. This outline form allows us to see the pattern of messages and responses for each thread. So for instance we can see how many students respond directly to any given message and how frequently threads "branch" . The indentation of a message indicates it is a direct response to a prior message. Several consecutive messages at the same level of indentation show that several students are responding to the same message.

In the example in fig 3.3, S20 posts the initial message and this is replied to by S7 (message 2) and also by S6, S8, S13, S20 and S19. However S7's message is directly replied to by S20, S13's message is replied to by S20 and this message is replied to by S7. This thread has a moderately complex branch structure and reaches a maximum thread depth of 5 levels (see sequence 1, 9, 10, 11, 12) The originating message in a thread is defined as level 1, a direct reply (reply-to) to a message at level 1 is at level 2, a direct reply to a message at level 2 is at level 3 and so on, message 12 is at level 5 and message 10 is at level 3.

The second set of files includes the textual content of each student message plus the sender and the date/time for that message. Again all identifying data was stripped from these files.

Table 3.1 Example of the text of a discussion board thread

S20 2/7/08 12:27 PM
Hi everyone -Here I go, stepping out on a limb to post the first ERD. Please be constructive with your criticism! It was hard to tell how detailed to be, because these diagrams can get really picky. I'll be interested to see how other people organized the county library. Hopefully, all the lines and boxes will translate okay. I saved mine in .doc format. Thanks,
S7 2/8/08 4:51 PM
Hi S20! I have a couple of questions: 1.) What are that dashed lines (around employees and supervisors and around Resources) representing? 2.) Why did you add a third resource for "Book Publisher Resource"? Wouldn't that be included in the book resource? I just posted my own County Library ERD and I hope I didn't oversimplify. Please critique! S7

S20 2/9/08 12:27 PM

Hi S7 - 1) I put the dashed lines around those two groups because "Resource" is a supertype for book, cd, and book publisher. Likewise, "Employee" is a supertype for manager and staff (discussed under the Generalization section on p. 283). On p. 295-6, diagram 8-15 shows a dashed box around the generalization hierarchy, so I added it into my own ERD to show

where the separate supertype-subtype hierarchies were. I don't know if this is a requirement for an ERD, but it helped me to keep things straight.

2) The county description said that details were maintained at the library on book publishers but not on cd publishers. However, it also stated that someone could search by publisher for both items. So, I imagined that the library must have some sort of database of book publishers and their general information - like addresses, the owners, etc. I thought this was a resource that library members could use, just like books and cds. Also, since this book publisher database includes data that the library maintains, I thought it should be included in the ERD. I had a terrible time figuring out how it fit in, and I still wonder if it should be there at all (it was my biggest question mark). So I'm definitely taking a look at your ERD to compare! Thanks,

S6 2/8/08 11:37 PM

Hello, I thought both of your County Library examples were well done. They showed the different degree of detail you can use in an ERD. As you can see I can learn a lot from both of you! S6

S8 2/10/08 11:11 AM

Hi S20, I found your ERD very complete, and in fact, very helpful to me in revising the customer order entry diagram which I posted. I looked at the way you handled the various employee designations an supervision over both the employees and the relationship to the county library membership to help me with the employee portion and how to apply the diagram to that employee packaging the order and sending it to the customer. I found enough similarities to help with that problem. After carefully reviewing your post, since I don't have any comments yet on my post, I think I can now go back and revise my post. Thanks for your completeness. S8

S13 2/10/08 6:39 PM

Your ERD was very helpful to me in trying to figure out how to do this. I saw a lot of different versions of the county library and yours was detailed but still to the point. I was unsure as to which relationships to present for certain entities. I like how you presented multiple connections between branch and member to clarify the quantity of different relationships. There were some connections that I did not think to put into my diagram like the relationship between employee and resource. I'm still learning how to do all of this, but your presentation helped me understand a lot more. Thanks!

S20 2/11/08 7:28 AM

So glad I was able to help (and S8, too)! I spent some time talking with xxxxxxxx to get a handle on it xxxxxx is a logic master. :-) I find myself wondering about S14's comments (in another library county thread) about whether the relationship between the employee and the patron are relevant to the system. I'm sure they are - it's a library! - but am trying to figure out how to put it in. Maybe some sort of membership request form" entity or "reference question" entity that could represent the different processes that occur within the system that are initiated by an employee-patron interaction? Or would that be getting too complex? S20

Table 3.1 Example of the text of a discussion board thread (continued)

S7 2/11/08 11:39 AM

Hi S20!, I just put something very similar into my thread (responding to S14's thoughts).
I just didn't find a better term, but that relationship has to be there I think. S7

S20 2/12/08 1:26 PM

Hi everyone -I've attached my revised ERD. Here are some resolutions I came to after our (very thought-provoking!) discussions:

1. I put in "loan transaction" because when an item is loaned, it must be recorded somehow in the system. It also is a relevant way that the member interacts with the resources and the system. I just used the PK's from "member" and "resource" to identify the loan transaction's PK - a concatenated key. I figured that there is one member and one resource for each transaction - even if someone is checking out a huge pile of books, each book counts as an individual transaction in the system.

2. I put in "Reference search" as a way to reconcile our debate about the employee-member relationship with the data system. (I think this was above-and-beyond effort but was keen on trying to figure it out anyway.) The "Search ID [PK]" is just a generic ID given to a search by the computer system and doesn't really mean anything other than giving the search a unique name - it doesn't ID the member or employee in any way. The time/date stamp just records when the search was done. This is probably information that would be kept in a cache and emptied at the end of the day, and may be referenced by employees to record a helpful/efficient

search tactic for future reference assistance. The employee could reference the search ID before it's deleted, and then record the steps in Word or some other program (without identifying the patron in any way). Having not worked in a library with a computerized system, I don't know how feasible this event entity is, but I thought I'd throw it out there and see what you all thought. Thanks, S20
S7 2/13/08 11:53 AM Hi S20, On your final ERD I don't quite understand why you have two PK's in your Loan Transaction entity. Isn't a PK a One and only thing? Can you have two PKs? Or should one of those be called something else? S7
S20 2/13/08 1:17 PM It's a concatenated key (see p. 273 in textbook) - a group of attributes that identifies an entity. Both of these keys are needed to identify one loan transaction. Without the call number, we wouldn't know which material the member checked out. Likewise, without the member number, we would know which member checked out the material. So, we wouldn't be able to specifically identify that single transaction without both keys. There's also an example on the ERD on p. 307. – S20
S15 2/13/08 6:03 PM I just wanted to let everyone involved in this discussion know that I found it very helpful. My ERD is on Student Accommodation. However, the County Library ERD seemed to be a popular choice so I found myself getting acquainted with it. I wasn't sure what the dotted lines meant, or if you could put two PK's with an entity, thanks for clearing all this up for me.
S3 2/13/08 8:02 PM S20, Both of your ERDs were great. I really like the loan transaction on your revision. The actual transaction is essential to the library process. Your models and explanatory posts were invaluable. S3
S19 2/13/08 10:43 PM S20 - Your diagram really helped me see what needed to be improved about mine. It looks great! I'm still having some confusion over the dotted lines between entities.
Table 3.1 Example of the text of a discussion board thread (continued)
S20 2/14/08 8:07 AM I actually got most of my understanding of the solid line v. dotted line between two entities from S10's thread. I basically read S10's explanation and the explanation in the text (p. 278-9) over and over and over again. Hopefully, I got it right. Here's how I understand it: If an entity helps to define another entity (shares a primary key, for example), then it needs a solid line - because it is an identifying relationship. However, if the entities don't define each other (an employee works at a specific branch, but the branch doesn't define the person's SSN, nor does the employee define the branch's name), then it is a nonidentifying relationship. It needs a dotted line (but only if you need to connect them to define how they interact!). S20

3.6. Data collected

This section details the raw data that was collected. Section 3.6 outlines how the data was

analyzed.

3.6.1 Discussion Board Data

This data represents the structural and text content data for the discussion boards. Data

collected in this category comprised the following.

> **Message Content:** The entire text content of messages posted on the course
> discussion board over the duration of the course was captured. This included

instructor posts. The content included explicit or implicit references to other student posts.

Message Details: Date and time that the message was posted. Who sent the message, the title of the message (if any), number of messages posted for each course or thread.

Pattern of messages: The pattern of messages in each discussion board thread, who posted the first message and the pattern of responses, which messages inspired which responses, how many responses were inspired by each message and how often a thread "branched".

The discussion board software allowed message thread outlines to be captured automatically. These outlines showed the date/time, title and poster for each message. Figure 3.4 shows an example of a thread outline. In Figure 3.4 indentation (rendered automatically by the discussion board software) indicates a direct response to an earlier message causing the thread to branch, so message 4 is a direct response to message 3, similarly, messages 5 and 6 are both direct replies to message 4. Each message that causes one or more direct responses is said to cause the thread to branch. These patterns were coded by hand.

```
Requirements analysis S20 1/22/08 2:42 PM                    [1]
    RE: Requirements analysis S1 1/23/08 3:30 PM             [2]
    RE: Requirements analysis S11 1/23/08 9:46 PM            [3]
        RE: Requirements analysis S20 1/24/08 9:53 AM        [4]
            RE: Requirements analysis S6 1/24/08 11:53 AM    [5]
            RE: Requirements analysis S19 1/26/08 8:09 PM    [6]
    RE: Requirements analysis S8 1/25/08 3:11 PM             [7]
        RE: Requirements analysis S20 1/26/08 2:49 PM        [8]
            RE: Requirements analysis S13 1/27/08 7:16 PM [9]
```
Figure 3.4 Example of a thread outline

3.6.2 Student Assessments

Data detailing students' perceptions was collected. This comprised

Student self-assessment of their own learning outcomes.
Student self-assessment of their own contributions to group discussions.
Student assessment of their peers' contributions to group discussions.
Student assessment of satisfaction with course.

3.6.3 Student Demographic Data

This will comprise:

Student age
Student ethnicity
Student Gender
Student prior experience with online learning
Student professional work experience in the course knowledge domain
Student professional work experience in other domains
Student current work and previous work sector

3.7 Analysis of data

3.7.1 Analysis of Messages

This relates to research questions: RQ1, RQ2, RQ3, RQ4 and RQ6

The focus of this section is on analyzing the content of individual messages. The content of interest is the type of student contribution and the context of a student contribution in a thread. This involves studying messages within each thread. Messages can be direct responses to instructor questions, responses to other student messages or unsolicited messages such as requests for advice.

This analysis involves two distinct stages of analysis, examining the message in isolation and examining the message in the context of other messages in a given thread.

3.7.1.1 Analyzing Messages in isolation

When was the message posted (date and time)?

Who posted the message?

Message Content: Messages were divided into segments representing coherent passages. Each message segment was coded according to two different coding schemes.

The first coding scheme examined the type of role-behavior demonstrated by that segment according to the Waters and Gasson scheme (Section 3.7.1.2). This examined the extent to which a segment was a social segment, an acknowledgement of a message, a request for information, a simple contribution of opinion or anecdote, an attempt to facilitate or reframe discussion or an attempt to close a discussion by reconciling perspectives and synthesizing an overall answer.

The second coding scheme examined the cognitive content of each message segment according to the scheme devised by Anderson and Krathwohl (Section 3.7.1.3). This scheme places the emphasis on the cognitive content of each segment the way in which a segment manipulates, builds on or analyses/evaluates/creates knowledge. Message content was coded by two independent coders for each scheme. The inter-coder reliability as measured by Cohen's Kappa was 0.8 for the Anderson and Krathwohl scheme and 0.86 for the Waters and Gasson scheme.

3.7.1.2 Coding Scheme for role-behavior of a message segment

Waters and Gasson (2005) derived seven active participant role-behaviors.

- Initiator
- Complicator
- Contributor
- Facilitator
- Knowledge-elicitor
- Vicarious-acknowledger
- Closer

Coding the segments required a content analysis of each segment and determining which category of role-behavior was exhibited. To illustrate how this worked I have described each role-behavior and attached several segments from messages; these have been categorized by the role-behavior they illustrate. The examples in the table below are taken from Waters and Gasson (Waters and Gasson 2005).

Table 3.2 Role-behaviors

Behavior Name/ Abbreviation	Description	Example
Initiator	These behaviors are **predominantly social**. These segments are often unrelated to the work in hand, and aim to set up and to maintain a social network of people with whom to interact. These segments can look for points of connection such as affiliations, occupations or hobbies. Variants include simply commenting on another participant's background and asking general questions. .	*"Hi, XXXX. **If your contributions to the XYZ class discussions are any indication, I think you'll be giving the class a few things to think about**, as well. Good to see you back!"* *Welcome back after xxxx xxxx**! Sounds like this is going to be a tough term** for you with all the travel!! **I grew up in California, San Jose**, and my husband grew up in Sacramento, so I know the way, but haven't had to do much of that type of commuting in a few years. I imagine it's quite a bit more time consuming these days... S11* ***That's quite a journey you've mad**e S12. How do you like Lancaster? I visit my cousin along the Susquehanna about once a year. I like it!! S11* *Hi, S4. We just finished XXXX XXXX together, whew!! Are you finishing in March?? **I don't think you'd mentioned your theatre involvement before**; do you miss it**? Do you still***

		try to dabble here and there*? I bet that backpack would get a bit too heavy if you did!! S11* ***I became a Colts fan in 1975 at the age of 5.*** *My dad asked me which team I would like to go see, Philly or Baltimore. The Eagles stunk back then and I liked the Colts helmet. Ten years of season tickets in Baltimore made me a Colts fan. Even though they moved to Indy, I've stuck with them.* ***Yes it did. I am also xxxxxx. I am from xxxxxx****. My family moved there before I was born from xxxxx.*
Table 3.2 Role-behaviors (continued)		
Contributor	These behaviors predominantly represent a minimal (grade-earning) obligation to contribute. This can be an initial answer to a instructor question such as *I think that* or *here is my diagram for the system* etc Such segments can add a viewpoint on the existing debate, but do not fundamentally change the nature of the debate. These segments may add to one position or another frequently by using examples from personal; experience, or just quoting examples from course materials or external sources contributors may also explain positions i.e. "*I did this because…"or this is what I did* In all courses under study instructors required students to post a set minimum number of messages for each discussion in order to earn a participation grade, typically 5 – 10% of overall grade. While individual instructors had different criteria for the quality of the posts no student could earn the full participation grade without making a certain number of posts. For examples of minimal grading criteria see section 3.6.1.2.1	"I do agree that there are portions of IT which have already been commoditized. Several of these have been mentioned in other postings and in Carr's article (storage, networks etc). In fact, in Champy's rebuttal he concludes that 'IT will eventually become a commodity' ." Speaking from a non-technical point of view, a true commodity IT service will be determined by the market. As a service approaches commodity status, the sales margins will drop due to a lack of differentiation between vendor offerings. As these margins drop, the smaller fish will be acquired by the bigger fish, or put out of business altogether. Eventually there will be very few (or even one) large vendors offering the service/product. At this point the government will step in and regulate it to avoid monopolistic practices. Information Systems possibly play the most important role in an organization. It includes the inputs and outputs of daily business activities. If your manager wants to know the sales volume for last month you have to dig in to your IS. This system can be an elaborate POS system or simply your role book that tracks sales and inventory I know of a case in the LPG industry in India where an information system enabled an LPG provider to keep track of their most important key resouce - the LPG cylinders for distribution of LPG to households or small businesses. We had an experience where some management went to a presentation given by Microsoft. They saw a description of how a set of tools could enable the migration we were considering. They

		came back sold on that process, because it looked so smooth and simple. IS is one of the most important factor in supporting business organization, especially in the ecommerce world. A website that has hundreds of thousands of items can easily manage inventory and saves time.
Table 3.2 Role-behaviors (continued)		
Facilitator	These behaviors attempt to draw out further debate on a question. Can include a question about a prior contribution i.e. *"Why did you use this model not XXX"* These segments may include community-oriented questions, such as "how would this happen?", or "I disagree with XXX but what do you think?". Such segments often resolve external or logistical problems for other students, Segments may moderate discussions, warn the community when a debate is wandering off topic, and Segments may actively purposely acknowledge other students' contributions i.e. *Bill makes a good point we need to consider….*	"S6, I like your definition of a commodity. I think that the Microsoft suite of applications, the operating system, Word, Excel, PowerPoint, Outlook, have become the commodity standards in the industry, for the most part." Thanks for pointing out the contradiction, S11. I don't get hung up on specific terminology (in the sense that I interpret what students discuss in terms of *their* language, rather than mine). I was trying to define IS vs. IT as a way of provoking thought and discussion - which obviously achieved its desired effect!; For that matter are not all lower level - "grunt type work" employees commodities? Entry level positions are usually given policies and procedures to follow in order to complete tasks. They rarely are brought in empowered to complete tasks as they see fit. I like your point here, S4. I think you've chosen and documented some great examples. Could I rephrase your point to the following:; The application of information systems solutions can still be strategic, with the potential for innovation being only within the bounds of human imagination's ability to continue to invent new ways to solve problems. I agree with you S9, I think one would have to delve deeper into the studies to figure out why IT spending dropped. I think the economy in general is mostly to blame, not the commoditization of IT. Good point. I tried to say something similar in a previous response. Some companies such as SAP, PeopleSoft, etc.. seem to be creating IS applications that could become commodities because many companies do the same type of general operations, BUT you made my point in that there is a large amount of customization of these applications to a specific companies processes

Table 3.2 Role-behaviors (continued)		
Complicator	Complicator behaviors reframe or redefine an existing position. This can be a response to an initial posed question or a response to someone else's response to the question. These segments can suggest alternative perspectives, point out inconsistencies in arguments, provide alternatives or alternative approaches and show complications that arise form an approach.	"That is not an easy question. It depends the business model and the impacts of IT on such models. If IT is restricted to general support then IT doesn't matter. If IT could change from the back office support to reshape the entire business then IT does matter." I think Carr's title is intentionally goading, and doesn't really describe his point very well. He isn't saying that IT doesn't matter – he is saying that it shouldn't be seen as intrinsically a driver of competitive advantage The debate should start from the definition of IT. Carr used the definition of " the technologies used for processing, storing, and transporting information in digital form". I'd like to rephrase this question slightly. "How important are the correct information systems to organizational success?" IS must be properly aligned with the business objectives in order to provide any real value A broader definition of IT includes the innovative uses to which it is applied. In any case, the innovater needs to be aware of the available tools and how they can be integrated to achieve the innovater's purpose
Peer-Knowledge-elicitor (P-K-E)	A peer-knowledge-elicitor behavior is a request for information from peers including What to do, What does something mean ? How to approach a task and why A request for feedback on a students own contributions	"Can somebody please tell me which diagram we have to create for this week's assignment is it the ERD or the ELH diagram, thanks." I found 'IT Doesn't Matter' article at http://www.nicholasgcarr.com/articles/matter.html but payment is required. Does anyone know where we can get this for free? Thanks. S5, can you post which product you are using for your address scrubbing? Does anybody know what the cost of living is in India or China, and how that compares to US? How do "real" wages(i.e. what you can do with the $) compare between those countries and US?
Vicarious-Acknowledger (V-A)	A vicarious acknowledger behavior demonstrates a recognition that someone else's contribution influenced their perspective (in a positive or negative way).**but does not use this to advance the debate**.	"I completely agree that any communication to high level management (especially the CEO!) needs to be very clear and succinct. I am a bit concerned that a single spaced two-page memo can be brief or succinct." I agree. IT is simply a tool. How you use that tool to support your business model to give your

		company the competitive is the key. Your post got me thinking. Our infrastructure is standards based. For example, all data communication will happen between various Internet devices using the TCP/IP standard. You make an excellent point about the "correct" information systems. It can definately be painful to the associated individuals when the system does not work or handle the load.
Table 3.2 Role-behaviors (continued)		
Closer	A "Closer" behavior an attempt to pull together a final or coherent answer to the question. This often attempts to bring a debate to a conclusion by reconciling differences and combine threads of arguments.	*"**Just ask Wal-Mart, UPS, Amazon, Ebay or even Xerox and Apple** if it really matters. All of these companies are continually attempting to innovate current technology to develop an edge over their competitors. **Even though** Apple & Xerox are currently minor players in their fields, as long as innovation continues to drive IT forward, they could be at the top of their class 10 years from now.; **In my opinion, IT, science** and medicine will never become commodities. All three will continually progress forward and **will always truly matter**."* *There will always be conflicts as long as the project is intended to server a multi-culture society. It is usually the skill of the feasibility team that will determine the success or failure of the feasibility analysis and ultimately the sucess or failure of the project*

3.7.1.2.1 Examples of instructors' discussion board minimal grading criteria

"You will be expected to submit at least one response to each discussion topic unless otherwise specified. Responding early in the week makes for a much livelier experience, for it gives an opportunity for students to respond to one another's submissions"

"Each week I will post several interesting questions as separate threads in each discussion board. Your requirement is that you participate in each discussion by posting a detailed, insightful reply to each question AND posting further comments to at least two other student replies to the same question. These contributions should be completed during the discussion period week for that particular discussion board. The weeks start on Monday and end on Sunday."

"Participation in the Discussion Boards is required and is part of your grade. As you take part, I expect you to engage other class members by adding comments or concepts from our readings."

"Each week, I will post a lecture on the course Blackboard site for you to watch & you will also be responsible for a number of readings as listed in the weekly schedule. I'll post discussion questions each week on the discussion board for consideration of that week's topic. Your participation in this discussion forum will be worth 4 points each week"

"I expect students to address all questions set on the discussion boards, not just one each week. I also expect students to engage in debate on the discussion boards"

3.7.1.3 Cognitive (Anderson and Krathwohl) Coding Scheme for a message segment

In the Anderson and Krathwohl scheme each segment can show one of six active types of cognitive behavior. Behavior subtypes are included in the Anderson and Krathwohl scheme but were only used in a documentary sense as the important distinctions are between incrementally more complex cognitive behaviors. Anderson and Krathwohl do not consider any subtypes to be of greater cognitive importance.

This scheme focuses on the cognitive processes involved in manipulating and using different forms of knowledge. This scheme is based on Anderson and Krathwohl's "A taxonomy for Learning, Teaching and Assessing" (2001). This taxonomy is a revision of Bloom's taxonomy of educational objectives (1951).

The Knowledge Dimension	The Cognitive Process Dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge						
Conceptual Knowledge						
Procedural Knowledge						
Meta-cognitive Knowledge						

Figure 3.5 Taxonomy of learning (Anderson and Krathwohl 2001)

The Anderson and Krathwohl taxonomy divides learning into two dimensions Knowledge and Cognitive Processes. The scheme we will be using uses only the Cognitive Processes dimension; we are interested in the manipulation or creation of knowledge not the exact form of knowledge.

The cognitive dimension distinguishes the way that participants interact with knowledge. Such interaction can be of six different types.

- Remember   – Recognize or Recall
- Understand – Interpret, Exemplify, Classify, Summarize, Infer, Compare, Explain
- Apply   – Execute, Implement (choose law or procedure or model)
- Analyze   – Differentiate, Organize, Attribute (determine POV etc)
- Evaluate   – Check (does it follow), Critique (determine which is better)
- Create   – Generate hypothesis, Plan, Produce

The examples in table 3.3 overleaf are taken from course IS-1A.

Table 3.3 The Cognitive dimension from Anderson and Krathwohl (2001)

Cognitive Behavior	Description	Example
Remember	The lowest level of cognitive process and refers to extracting knowledge from memory	I read an newspaper editorial that stated 40% of public schools in Pennsylvania do not have a library! That is astounding.
Understand	To construct meaning from supplied material – building connections between old knowledge and new knowledge	A great model for this task may include the Denver Public Library and the Kid page they have established there. http://kids.denverlibrary.org/
Apply	Using procedures to perform a task or solve a problem	I constructed my system with the idea that the call number was unique for every item. For example: Copy #1 of "War and Peace" might be 123456789001, and copy #2 would be 123456789002 -- reserving the last two digits of the call number for the copy number.
Analyze	Breaking material into parts and determining how the parts form an overall structure. This can include determining which parts of a structure are relevant or unimportant, Building coherent connections between pieces of information or Ascertaining the point of view, biases, values or intents in a communication, determine POV etc	I tried to make it clear in my diagram that every person was part of the county system and that there were lots of transactions going on. Not just loan transactions for members, but employee transactions as well. For this reason, I created two separate entities entitled employee transactions (to cover things like pay, leave, sick leave, etc) and member transactions (to cover borrowing, returning, fine paying, etc..).
Evaluate	Making judgments about material presented based on certain criteria such as consistency, efficiency and so on	I don't quite understand why you have two PK's in your Loan Transaction entity. Isn't a PK a One and only thing?
Create	Putting elements together to create a coherent whole; this can include reorganizing an existing model. Something new is created – it can be a new set of hypotheses, a new plan for a solution or a new product	In addition to cultural feasibility, I suggest an additional feasibility test for school libraries: educational feasibility. This feasibility test would ascertain whether a project would improve or support students' academic success. This feasibility assessment would be crucial in a school library, as a school's bottom line is not to make money but to educate young people.

The two schemes derive from different backgrounds and were developed wholly independently. The Waters and Gasson scheme came out of a grounded theory analysis and is based on the intent of the message. The Anderson and Krathwohl scheme is an educational research derived scheme, it is robust and the dimensions used are cognitive, whereas the Waters and Gasson scheme contains social, cognitive and pedagogical elements. The two schemes are quite different, for instance in the Anderson and

Krathwohl scheme there is an explicit pyramid of cognitive processes where the bottom is Remember and the top is Create and quite definitely seen as the pinnacle of achievement. In Waters and Gasson there is no such strict arrangement although facilitate, complicate and closer behaviors are considered to be higher "quality" in terms of promoting discussion. That there is some concordance between some elements in the two schemes is certainly interesting.

3.7.1.4 Analyzing Messages in context

For each message thread a three part analysis was performed. First the thread outline was shown (see Figure 3.6), and then decomposition was performed that showed each message in the thread decomposed into segments with each segment coded according to one of the two schemes. Finally, a narrative was created that summarized the pattern of messages based both on the content of each message and how each message impacted the thread.

Message content was coded by two independent coders for each scheme. The inter-coder reliability as measured by Cohen's Kappa was 0.8 for the Anderson and Krathwohl scheme and 0.86 for the Waters and Gasson scheme.

Requirements analysis S20 1/22/08 2:42 PM   [1]
   RE: Requirements analysis S1 1/23/08 3:30 PM   [2]
   RE: Requirements analysis S11 1/23/08 9:46 PM   [3]
     RE: Requirements analysis S20 1/24/08 9:53 AM   [4]
      RE: Requirements analysis S6 1/24/08 11:53 AM   [5]
      RE: Requirements analysis S19 1/26/08 8:09 PM   [6]
       RE: Requirements analysis S13 1/27/08 7:16 PM [9]

Figure 3.6 Example of thread outline

In Table 3.4 behavior types are named strictly according to the Waters and Gasson (2005)

scheme. These names are not fixed roles such as used to describe individuals but are

descriptions of behavior types that are represented by the different segments. The first

segment in the table represents a Complicator type behavior, an individual behavior that

complicates the discussion, it does not refer to a person exhibiting a fixed role. Similarly,

the contributor is a behavior type that contributes to the discussion, not a person.

Table 3.4 Thread decomposition according to Waters and Gasson scheme

Message	Behavior Type
S20 1/22/08 2:42 PM Hi everyone – Requirements analysis never really ends because it is a necessary maintenance feature for the lifetime of a system.	Complicator
Requirements analysis involves the management of a process to "submit proposed changes to requirements for a system" (Bentley & Whitten, 2007, p. 189).	Contributor
When problems or potential improvements to a system begin to develop, there needs to be a way for those interacting with and noticing problems with the system to be able to gets these issues assessed for potential changes.	Contributor
Requirements analysis never really ends, then, until the end of the lifetime of the system; problems and potential advancements will continue to arise due to external impacts and aging technology.	
The reality of never ending requirements analysis can be accommodated through a number of ways, most of which revolve around effective communication. Open communication between system owners, users, analysts, designers, and builders must exist in order for problems to be effectively reported and assessed. This communication can be done via telephone, email, or face‐to‐face. It could also be done through a more structured system, such as requirements management forms that could be filled out on paper or online, perhaps through a intranet website specifically designated for channeling system problem reports.	Complicator Contributor
This structure could be set up to automatically communicate the status of the reports to those involved with their introduction and assessment. This automatic communication could aid in the reports' originators feeling "kept in the loop" and validated for their suggestions. It could also aid in problems and potential improvements being recognized, assessed, and solved/implemented in a much more efficient and timely manner.	Contributor

Thanks,S20	
Table 3.4 Thread decomposition according to Waters and Gasson scheme (continued)	
S1 1/23/08 3:30 PM Hello S20 I think that you are absolutely right in that there is a never ending cycle of requirements analysis that continues as the new information system is introduced, used, and improved. When the asset has reached its' life expectancy, the process begins again.	Vicarious-Acknowledger
Interestingly, (or not, depending upon how you're feeling about it ;), much of the requirements analysis you perform on a legacy asset can be plugged into the scope definition phase in developing a new system.	Facilitator
To put it another way, as we try to figure out what we need our system to be doing, and how we are going make the system to do that, we are constantly perform requirements analysis.	Complicator
Once we decide that we can't tweak our system any further, we might want to start from scratch or engage in business process redesign. It seems to me that we could plug much of the work we've done in our continual requirements analysis directly into scope definition as we start to define our problems for the new system.	Contributor
I like your idea of an intranet website dedicated to project development. I think proper communication is key to the development and implementation of any project.	Facilitator
Additionally, everybody up and down the food chan needs to feel both informed and heard if they are going to be onboard with a project that is going to require them to change how they perform their jobs. Good post - thanks. Very Respectfully,S1	Contributor
S11 1/23/08 9:46 PM S20, I think your point on open communication cannot be stressed enough. I think I failed to effectively think about this point in my post. I tended to think of the issue through only the analysts eyes, but as you point out one cannot be effective in analyzing requirements without effective communication.	Facilitator
In the end, it will really be the users dealing with the system on a day to day basis, so I suppose that it would be extremely important to keep some sort of outlet for users to communicate ideas in order to keep the continuation of requirements analysis in tact. S11	Facilitator
S20 1/24/08 9:53 AM Hi S11 - The idea of communication with the users is a big one for me, probably because I worked at a company where miscommunication (and lack of communication!) seemed inherent in the system, and I was often the user who was not being heard.	Vicarious-Acknowledger Contributor
My co-workers and I were always running into possible redundancies in our work (Excel spreadsheets that needed to be updated but just reported the same data, for example), but we didn't know who to report it to, nor did we have the confidence that anything would be done about it. Talk about two ingredients for disaster, eh? I became a very disillusioned	Contributor

worker rather quickly in that environment. :-) S20	
Table 3.4 Thread decomposition according to Waters and Gasson scheme (continued)	
S6 1/24/08 11:53 AM S20 and S11 I couldn't agree more with the idea of communication between all stakeholders being vital to the success of any system.	Vicarious-Acknowledger
I have also had the opportunity to work where there was communication and it was very beneficial and have also seen where the lack of communication ends in as s20 said "disaster." I wish some of the administration would have taken this class! S6	Contributor
S19 1/26/08 8:09 PM I also think communication is essential, not only in the requirements analysis, but in all aspects of the library's functionality. There is a need for improved communication at my library as well.	Facilitator
We've come a long way, but still there are a lot of issues that are not communicated effectively. The lack of communication leaves a lot of us not only in the dark, but frustrated because some of the information could have prevented a lot of reduncancy in our work.	Contributor
In order to improve communication between library staff members and library faculty members we have instituted several BLOGS, have more frequent staff and faculty meetings, and put out a newsletter every so often.	Contributor
Thanks for reiterating the importance of communication!	Vicarious-Acknowledger
S8 1/25/08 3:11 PM Hi S20. I think that you are completely correct about the importance of communication being open and necessary for requirements analysis to successfully continue on a long term basis.	Vicarious-Acknowledger
I do have some rather practical concerns about such theoretical and general ideas of communication remaining open. I guess my concern is that one is limited by the structure and tone of the organization itself. For example, in some organizations, top management doesn't care for underlings who don't follow chain of command in order to make much needed comments. Then, if upper management insists on such ideas filtering through chain of command, there may be a filtering effect such that what is really said and meant by the end users may not be properly communicated to those involved in making the changes which will assisted in continuing improvement of the system.	Complicator
Sometimes in these situations, people are also reluctant to make suggestions as the suggestions might be perceived as complaints. In some companies, there is a tendency for people not to admit that something isn't working as planned in a particular department, and Thus, to bury the	Complicator

problems. I suppose that in reality, this is all within the realm of trying to keep communication" open, but I wonder as a practical matter, if this really exists in the real world.	Complicator
Table 3.4 Thread decomposition according to Waters and Gasson scheme (continued)	
S20 1/26/08 2:49 PM Hi S8 - You know, as I was posting my answer, I thought to myself, "I wonder how practical this idea is?" I definitely understand your thoughts. Would "underlings" even use it? Would they be worried about losing their jobs if they "complained" too much?	Facilitator
Perhaps it would need some sort of managerial approval, or the website would only be open to management for submitting ideas. That's part of management's job anyway, isn't it? Like any requirements analysis and management,	Complicator
I'm sure the process developed to manage the system would depend on the specific needs and organization of the business.	Contributor
S13 1/27/08 7:16 PM I think that it is very important for members of a project (on any level) to voice their opinions concerning business requirements. Communication is key in developing a successful system.	Vicarious-Acknowledger
However, this does remind me of last week's discussion. I think we noted that while communication is vital, one does not want to be swayed or overwhelmed by excessive opinions. This could put the process offtrack, create muddled development, or even more confusion.	Complicator
One's task can certainly become a burden if the communication system opens floodgates to "complaining."	Complicator

3.7.1.6 Example of thread analysis for Anderson and Krathwohl scheme

Requirements analysis S20 1/22/08 2:42 PM [1]
   RE: Requirements analysis S1 1/23/08 3:30 PM [2]
   RE: Requirements analysis S11 1/23/08 9:46 PM [3]
      RE: Requirements analysis S20 1/24/08 9:53 AM [4]
         RE: Requirements analysis S6 1/24/08 11:53 AM [5]
         RE: Requirements analysis S19 1/26/08 8:09 PM [6]
   RE: Requirements analysis S8 1/25/08 3:11 PM [7]
      RE: Requirements analysis S20 1/26/08 2:49 PM [8]
         RE: Requirements analysis S13 1/27/08 7:16 PM [9]
Figure 3.7 Example of thread outline

Table 3.5 Thread decomposition according to Anderson and Krathwohl scheme

Message	Content Analysis of message Anderson and Krathwohl
S20 1/22/08 2:42 PM Hi everyone ‑ Requirements analysis never really ends because it is a necessary maintenance feature for the lifetime of a system. Requirements analysis involves the management of a process to "submit proposed changes to requirements for a system" (Bentley & Whitten, 2007, p. 189).	Remember
When problems or potential improvements to a system begin to develop, there needs to be a way for those interacting with and noticing problems with the system to be able to gets these issues assessed for potential changes.	Create
Requirements analysis never really ends, then, until the end of the lifetime of the system; problems and potential advancements will continue to arise due to external impacts and aging technology.	Create
The reality of never ending requirements analysis can be accommodated through a number of ways, most of which revolve around effective communication. Open communication between system owners, users, analysts, designers, and builders must exist in order for problems to be effectively reported and assessed. This communication can be done via telephone, email, or face ‑ to ‑ face. It could also be done through a more structured system, such as requirements management forms that could be filled out on paper or online, perhaps through a intranet website specifically designated for channeling system problem reports.	Apply
This structure could be set up to automatically communicate the status of the reports to those involved with their introduction and assessment. This automatic communication could aid in the reports' originators feeling "kept in the loop" and validated for their suggestions. It could also aid in problems and potential improvements being recognized, assessed, and solved/implemented in a much more efficient and timely manner. Thanks,S20	Create
S1 1/23/08 3:30 PM Hello S20 I think that you are absolutely right in that there is a never ending cycle of requirements analysis that continues as the new information system is introduced, used, and improved. When the asset has reached its' life expectancy, the process begins again.	Explain
Interestingly, (or not, depending upon how you're feeling about it ;), much of the requirements analysis you perform on a legacy asset can be plugged into the scope definition phase in developing a new system.	Create
To put it another way, as we try to figure out what we need our	

system to be doing, and how we are going make the system to do that, we are constantly perform requirements analysis.	Create
Once we decide that we can't tweak our system any further, we might want to start from scratch or engage in business process redesign. It seems to me that we could plug much of the work we've done in our continual requirements analysis directly into scope definition as we start to define our problems for the new system.	Create
I like your idea of an intranet website dedicated to project development. I think proper communication is key to the development and implementation of any project.	
Additionally, everybody up and down the food chan needs to feel both informed and heard if they are going to be onboard with a project that is going to require them to change how they perform their jobs. Good post - thanks. Very Respectfully,S1	Create

Table 3.5 Thread decomposition according to Anderson and Krathwohl scheme (continued)	
S11 1/23/08 9:46 PM S20, I think your point on open communication cannot be stressed enough. I think I failed to effectively think about this point in my post. I tended to think of the issue through only the analysts eyes, but as you point out one cannot be effective in analyzing requirements without effective communication.	Evaluate
In the end, it will really be the users dealing with the system on a day to day basis, so I suppose that it would be extremely important to keep some sort of outlet for users to communicate ideas in order to keep the continuation of requirements analysis in tact. S11	Create
S20 1/24/08 9:53 AM Hi S11 - The idea of communication with the users is a big one for me, probably because I worked at a company where miscommunication (and lack of communication!) seemed inherent in the system, and I was often the user who was not being heard.	Understand
My co-workers and I were always running into possible redundancies in our work (Excel spreadsheets that needed to be updated but just reported the same data, for example), but we didn't know who to report it to, nor did we have the confidence that anything would be done about it. Talk about two ingredients for disaster, eh? I became a very disillusioned worker rather quickly in that environment. :-) S20	Understand
S6 1/24/08 11:53 AM S20 and S11 I couldn't agree more with the idea of communication between all stakeholders being vital to the success of any system.	
I have also had the opportunity to work where there was communication and it was very beneficial and have also seen	Understand

where the lack of communication ends in as s20 said "disaster." I wish some of the administration would have taken this class! S6	
Table 3.5 Thread decomposition according to Anderson and Krathwohl scheme (continued)	
S19 1/26/08 8:09 PM I also think communication is essential, not only in the requirements analysis, but in all aspects of the library's functionality. There is a need for improved communication at my library as well.	Create
We've come a long way, but still there are a lot of issues that are not communicated effectively. The lack of communication leaves a lot of us not only in the dark, but frustrated because some of the information could have prevented a lot of reduncancy in our work.	Understand
In order to improve communication between library staff members and library faculty members we have instituted several BLOGS, have more frequent staff and faculty meetings, and put out a newsletter every so often.	Apply
Thanks for reiterating the importance of communication!	
S8 1/25/08 3:11 PM Hi S20. I think that you are completely correct about the importance of communication being open and necessary for requirements analysis to successfully continue on a long term basis.	
I do have some rather practical concerns about such theoretical and general ideas of communication remaining open. I guess my concern is that one is limited by the structure and tone of the organization itself. For example, in some organizations, top management doesn't care for underlings who don't follow chain of command in order to make much needed comments. Then, if upper management insists on such ideas filtering through chain of command, there may be a filtering effect such that what is really said and meant by the end users may not be properly communicated to those involved in making the changes which will assisted in continuing improvement of the system.	Evaluate
Sometimes in these situations, people are also reluctant to make suggestions as the suggestions might be perceived as complaints. In some companies, there is a tendency for people not to admit that something isn't working as planned in a particular department, and Thus, to bury the problems.	Evaluate
I suppose that in reality, this is all within the realm of trying to keep communication" open, but I wonder as a practical matter, if this really exists in the real world.	Evaluate
S20 1/26/08 2:49 PM Hi S8 - You know, as I was posting my answer, I thought to myself, "I wonder how practical this idea is?" I definitely understand your	Evaluate

thoughts. Would "underlings" even use it? Would they be worried about losing their jobs if they "complained" too much?	
Perhaps it would need some sort of managerial approval, or the website would only be open to management for submitting ideas. That's part of management's job anyway, isn't it? Like any requirements analysis and management,	Create
I'm sure the process developed to manage the system would depend on the specific needs and organization of the business.	Create
Table 3.5 Thread decomposition according to Anderson and Krathwohl scheme (continued)	
S13 1/27/08 7:16 PM I think that it is very important for members of a project (on any level) to voice their opinions concerning business requirements. Communication is key in developing a successful system.	Understand
However, this does remind me of last week's discussion. I think we noted that while communication is vital, one does not want to be swayed or overwhelmed by excessive opinions. This could put the process offtrack, create muddled development, or even more confusion.	Evaluate
One's task can certainly become a burden if the communication system opens floodgates to "complaining."	Understand

3.7.1.8 Reliability of Coding

To ensure reliability for the coding schemes two independent coders were used. The Cohen's Kappa for the two coders was 0.86 for the Waters and Gasson scheme and 0.80 for the Anderson and Krathwohl scheme representing strong agreement.

The two coders were both advanced doctoral students. One coder was the author. Both coders used the same rubric for the coding schemes. The rubric for the Anderson and Krathwohl scheme was taken verbatim from Chapter 5 of Anderson and Krathwohl (2001), which describes the cognitive dimensions giving examples. The rubric for the Waters and Gasson (2005) scheme was taken from examples from the data set in the 2005 study. The author described both schemes in detail to the second coder and illustrated the scheme with real examples both from the rubrics and from the larger 2005

data set. Then both coders independently coded a set of samples using both schemes. The results of the coding were compared and discrepancies identified. The final coding was arrived at after extensive discussion. Agreement from this first pass before discussion was "good" at Cohen's kappa of 0.6 (Anderson and Krathwohl) and 0.62 (Waters and Gasson). There were two further training sets used. After the second set the differences were smaller and the negotiations minimal. After the third training set agreement had reached 0.8 (Anderson and Krathwohl) and 0.86 (Waters and Gasson) and no further negotiation was deemed necessary as these levels are considered very strong.

3.7.1.9 Analysis of patterns of messages

This section relates to research questions: RQ1, RQ2, RQ3, RQ4 and RQ6.

This involves studying the pattern of messages within each thread. This comprises the following details.

> What is the message count in each question thread?
> What is the maximum depth of each thread?
> How frequently does a thread branch into of Sub-threads, i.e. does debate spur into tangential discussions.
> Which individuals are active in each thread?
> Does a thread demonstrate a pattern of social engagement (Table 2.4, page 33) in knowledge building?

These measures can be exemplified by reference to Figure 3.8. Figure 3.8 shows two message threads started by two students. The thread started by S17 has a message count of 8 (messages 1a – 1h) and the thread started by S24 also has a message count of 8. The originating message of any thread is at level one. The thread started by S17 has a maximum depth of 6, the deepest message is message 1g which is 5 levels down from the originating message of the thread as shown by 5 levels of indentation. By contrast the thread started by S24 has a maximum depth of 3, messages 2c, 2d, 2e and 2f are two

levels deeper than the originating message. The increasing level of depth is called a

branch, so there is a branch at message 1b, at message 1c, at message 1d, at message 1e

but not at message 1f. For each thread I list the participants who are active in it. Social

engagement is described in section 3.7.1.10.

```
The High Cost of Rushing S17  1/28/08 11:27 PM                              [1a]
    RE: The High Cost of Rushing  S6    1/30/08 2:35 PM                     [1b]
        RE: The High Cost of Rushing  S10  1/30/08 4:53 PM                  [1c]
            RE: The High Cost of Rushing  S20  2/2/08 8:58 AM               [1d]
                RE: The High Cost of Rushing  S17  2/2/08 11:34 AM          [1e]
                RE: The High Cost of Rushing  S14  2/3/08 12:21 AM          [1f]
                    RE: The High Cost of Rushing  S17  2/3/08 7:58 AM       [1g]
        RE: The High Cost of Rushing  S17  1/31/08 2:13 PM                  [1h]
Process Design Specifications   S24 1/29/08 10:49 PM                        [2a]
    RE: Process Design Specifications    S10 1/31/08 12:59 PM               [2b]
        RE: Process Design Specifications    S24 1/31/08 2:32 PM            [2c]
        RE: Process Design Specifications    S15 2/01/08 12:00 PM           [2d]
        RE: Process Design Specifications    S2 2/02/08 2:58 PM             [2e]
        RE: Process Design Specifications    S22 2/02/08 10:25 PM           [2f]
    RE: Process Design Specifications    S21 1/31/08 1:42 PM                [2g]
    RE: Process Design Specifications    S19 1/31/08 9:50 PM                [2h]
```
Figure 3.8 Example of two threads

3.7.1.10 Social Engagement

Does the thread show that participants are actively constructing knowledge by

acknowledging, challenging or building on each others contributions iteratively or does

the thread show a linear progression with participants making unconnected contributions

and not responding to each others' posts?

Social engagement here is measured by the frequency of branches within threads which

include multiple contributions by the same participant(s). The frequency with which an

individual iteratively interacts in branches is a measure of how socially engaged they are.

The frequency of iterative branches within a thread shows the overall level of social engagement for that thread. See Table 2.2, Page 15 for a fuller description of Social Engagement.

3.7.1.11 Analysis of individuals' behavior

This section relates to research questions: RQ1, RQ2, RQ3, RQ4 and RQ6.

This involves building up a profile of individuals posting behavior over the duration of each course. Since we capture who posts what kind of message it is possible to get an evolving picture of individual participant behavior as well as an aggregate picture. This analysis includes:

Number of messages posted
Number of threads started
Number of segments posted of each type
Number of responses invoked by posted messages
Type of segments inspired by messages posted
Length of threads started (number of messages)
Depth of threads started (maximum)
Average length of messages posted

3.7.1.12 Student self-assessment

This section relates to research questions: RQ3, RQ4 and RQ5.

In the prior section (3.3) we outlined that we were going to assess students' perceptions about the course and the part they played in it. This involved collecting:

Student self-assessment of their own **learning outcomes**.
Student self-assessment of their own contributions to group discussions.
Student assessment of **satisfaction** with course.
Student assessment of their **peers' contributions** to group discussions.

3.8 Self-assessment instrument (Post-course questionnaire)

Questionnaire-2 **(Post-course questionnaire)**

My expectations for this course were met

Strongly Agree - Agree - Undecided - Disagree   Strongly Disagree.

Overall I was satisfied with this course

Strongly Agree - Agree - Undecided - Disagree   Strongly Disagree.

I found the online discussion board to be a valuable part of this course

Strongly Agree - Agree - Undecided - Disagree   Strongly Disagree.

The online discussion contributed to my having a greater understanding of the topic

Strongly Agree - Agree - Undecided - Disagree   Strongly Disagree.

I frequently found myself in a strong leadership role in the online debate

Strongly Agree - Agree - Undecided - Disagree   Strongly Disagree.

Apart from yourself who else did you feel were the most important contributors to the online debate, please rank the best (2- 5) contributors(*)

- Answers to this question will be anonymised

3.9 Presentation of results

The results are presented in Chapter 4 and Chapter 5. Chapter 4 covers the primary analysis driven specifically by the defined research questions. The results in Chapter 4 consist of quantitative and qualitative analyses. The results from Chapter 4 showed some intriguing and potentially significant anomalies in the data and some unexpected results which raised further questions. These results indicated a need to reexamine the data both by employing other methods and by framing new questions. Chapter 5 includes more qualitative analyses that dig deeper into some specific issues that were not part of the initial hypotheses.

4. Chapter 4: Primary analysis

4.1 Overview for all courses

From the 10 courses chosen for basic analysis there were a total of 239 students. From these 239 students 137 students (57%) returned a completed questionnaire 1 and of these 107(78%) also completed questionnaire 2.

A total of 35 students were nominated by their peers who answered questionnaire 2 as Thought-Leaders, this number varied from 2 to 5 per course (average 3.4). Sixteen were considered strong Thought-Leaders, six were considered moderate Thought-Leaders and 13 were considered weak Thought-Leaders. Approximately 15% of students were nominated by their peers as Thought-Leaders; this does not include those considered marginal Thought-Leaders. If those deemed to be marginal Thought-Leaders (nominated by at least one peer but less than 30% of those voting) are included this figure rises to 68 (28%). On a course by course basis the maximum percentage of students considered to be Thought-Leaders was 23% and the minimum was 8%, the precise figures for Thought-Leaders per students in a course were 4/23, 3/24, 5/25, 2/25, 4/24, 3/26, 3/23, 5/22, 2/22 and 4/22. The number of strong Thought-Leaders per students in a course were 2/23, 2/24, 0/25, 2/25, 3/24, 2/26, 0/23, 3/22, 0/22, and 2/22. This represents a range of 0% to 14% per course.

The average age of students was 31.47 (maximum 57, minimum 21). The average number of prior courses taken within the knowledge domain was 11 (maximum 25, minimum 0), the average number of online courses taken beforehand was 5 (maximum 25, minimum 0), the average amount of professional domain experience was 5 years

(maximum, 25 years, minimum 0 years) and the average amount of total professional working experience was 7 years (maximum 35 years, minimum 0 years)

For the 10 courses chosen there were a total of 9393 student messages posted (average 39 messages per student, minimum 4, maximum 242) and 1737 instructor messages posted giving a total of 11,130 messages, an average of 1113 per course (minimum 356, maximum 2745).

4.2 Overview for course IS-1A

Since the volume of collected data was too large to be analyzed in depth one course was chosen for detailed analysis. This analysis involves looking deeply at the content of individual messages and coding messages into segments representing different role-behaviors from the Waters and Gasson (2005) scheme and cognitive dimensions from the Anderson and Krathwohl (2001) scheme. It is impossible to answer RQ1, RQ2, RQ3, and RQ4 without decomposing significant numbers of messages and threads, since these questions depend on an understanding of the relative importance of different role-behaviors and their relationships to specific cognitive outcomes. Similarly, without a detailed picture of the progress of message threads it is impossible to see the impact of social engagement which is also required to answer RQ1 thru RQ4. A detailed analysis is also required to gain a picture of discussion quality which includes looking at individual message threads. Finally, RQ6 which investigates common features of Thought-Leaders includes examining if the perceived Thought-Leaders can be identified by their behaviors, and this can only be ascertained by examining this content in detail.

Course IS-1A was chosen. This course had an above average level of participation but not the greatest; in terms of messages posted it was the 3rd highest. More importantly, course IS-1A was chosen as a good model for collaborative learning since it was the course which had the highest percentage of student-to-student messages in the discussion boards. This is deemed essential since it requires students to actively focus on collaborating with their peers and not with the instructor. This positive interdependence with peers is a strong requirement for collaborative learning (Bruffee 1999).

For the course chosen for detailed analysis (IS-1A) there were 24 students who together posted a total of 1426 messages (average 59 messages per student, maximum 105, minimum 17) in 352 message threads (Average 4 messages per thread) and 32 instructor messages.

A message thread is a complete self-contained sequence of several messages. The sequence is started by one student participant posting an answer to an instructor question or simply starting a discussion topic. A second participant will then post a reply to this initial message. This reply may itself be replied to or more students may reply independently to the initial message. Each time a first direct reply to a message is posted the thread is said to branch.

```
Message                                   Message Number
County Library S20 2/7/08 12:27 PM                         [1]
    RE: County Library S7 2/8/08 4:51 PM                   [2]
        RE: County Library S20 2/9/08 12:27 PM            [3]
    RE: County Library S6 2/8/08 11:37 PM                  [4]
    RE: County Library S8 2/10/08 11:11 AM                 [5]
    RE: County Library S13 2/10/08 6:39 PM                 [6]
        RE: County Library S20 2/11/08 7:28 AM            [7]
            RE: County Library S7 2/11/08 11:39 AM        [8]
    My final ERD S20 2/12/08 1:26 PM                       [9]
        RE: My final ERD S7 2/13/08 11:53 AM             [10]
            RE: My final ERD S20 2/13/08 1:17 PM         [11]
                RE: My final ERD S15 2/13/08 6:03 PM     [12]
        RE: My final ERD S3 2/13/08 8:02 PM              [13]
    RE: County Library S19 2/13/08 10:43 PM               [14]
        RE: County Library S20 2/14/08 8:07 AM           [15]
```
Figure 4.1 Example of thread outline

In the outline example above each line shows the following information:
- The title of the message (e.g. "County Library")
- The originator of the message (e.g. S20)
- The date and time that the message was posted (e.g. 2/7/08 12:27 PM)

In the example above, S20 posts initial message and this is replied to by S7 (message 2) and also by S6, S8, S13, S20 and S19. However S7's message is directly replied to by S20, S13's message is replied to by S20 and this message is replied to by S7. This thread has a moderately complex branch structure and reaches a maximum thread depth of 5 levels (see sequence 1, 9, 10, 11, 12).

4.3 Thread Sampling

It was decided to use a broad representative sample of message threads for analysis which showed a range of discussion quality from poor to very good. It was hoped that good threads and poor threads would show very different patterns of behaviors and social

engagement levels. Thus, a sufficient number of threads of differing quality levels were needed. The following general sampling process was chosen.

- Select the "best" threads
- Select some "good" threads
- Select some "Average" threads
- Select some "poor" threads

4.3.1 Stratifying the threads

Without examining threads in details it was impossible a priori to evaluate which would be the highest quality threads. Thus, as a proxy for this process a number of commonly used criteria (Harasim 1989; Kumari 2001; Morris and Naughton 1999; Picciano 2002) were chosen. These were

- Number of messages in the thread (M)
- Maximum depth of the thread (D)
- Number of different participants in the thread (P)

A discussion board thread in which there are very few messages does not show great potential for discussion. If there are too few messages it is unlikely that real collaboration is taking place. A discussion board thread in which there are few participants similarly does not indicate a great level of engagement from students in collaborative learning. A discussion board thread where there is limited depth indicates that participants are independently posting contributions with little regard to peers contributions.

The details of each of the 352 threads were loaded into a spreadsheet. The details included

- The week of the course
- The question number for that week (1 or 2)
- The thread for that question in chronological start order
- The number of messages for that thread(M)
- The maximum depth of that thread(D)
- The number of participants for that thread(P)

Three different sorts were performed on the thread details

- Messages-Depth-Participants (MDP)   #1
- Number of Messages in thread(descending) then
- Maximum depth of thread (descending) then
- Number of participants in thread (descending)

- Depth-Participants-Messages (DPM)   #2
- Maximum depth of thread (descending) then
- Number of participants in thread (descending)
- Number of Messages (descending)

- Participants-Messages-Depth (PMD)   #3
- Number of participants in thread (descending) then
- Number of Messages in thread (descending) then
- Maximum depth of thread (descending)

This produced three ordered lists of threads where each fundamental characteristic of interest was equally influential as each occupied sort order positions of 1, 2 and 3.

4.3.2 Selection of Threads

From each of the sorted lists the top 10 threads were chosen. Since many threads occupied top positions in 2 or 3 sort lists the next 5 threads were chosen from each list.

The end result is that 25 threads were selected for a final sort list. From this list 14 had between 9 and 15 messages, these were designated as best threads. The next 8 threads had between 6 and 8 messages; these were designated as high message threads. The Final three threads had only 5 messages. Since the average number of messages per thread is 4 messages threads with 3 to 5 messages are designated average message threads. Average message threads were Thus, returned to the pot for random selection. Five of these average message threads were randomly selected. Threads with less than 3 messages are designated low message threads. Five of these were randomly selected.

Table 4.1 lists the threads selected for detailed analysis.

Table 4.1 Threads selected for analysis

Number	Week	Question	Thread	Messages	Maximum thread depth	Participants
Best Threads						
1	5	1	3	15	5	8
2	6	1	10	12	7	8
3	6	1	3	11	3	9
4	9	1	9	11	3	7
5	3	2	12	11	4	9
6	3	1	1	9	5	7
7	10	1	12	11	6	9
8	6	1	4	10	4	6
9	7	1	11	10	4	4
10	2	1	22	9	4	7
11	2	1	5	9	4	6
12	5	1	8	9	4	6
13	5	1	4	9	5	4
14	5	1	12	9	9	5
High Message Threads						
15	3	2	8	8	2	8
16	9	1	2	8	2	8
17	1	2	4	8	3	7
18	2	2	15	8	3	7
19	4	1	3	8	6	5
20	10	1	6	7	3	7
21	7	1	9	7	6	4
22	7	1	14	6	5	3
Average Threads						
23	6	1	1	5	5	4
24	7	1	17	5	2	2
25	1	2	12	4	2	4
26	1	1	10	3	3	3
27	1	2	19	3	2	2
Low message threads						
28	1	1	6	2	2	2
29	2	1	10	2	2	2
30	3	1	7	2	2	2
31	6	1	14	2	2	2
32	10	1	20	2	2	2

4.4 Student Assessed Thought-Leaders for course IS-1A

RQ4, RQ5 and RQ6 all involve investigating the characteristics of students chosen by their peers as Thought-Leaders and their impact on student perceptions. RQ4 asks if certain role-behaviors and levels of social engagement make a student more likely to be regarded as a Thought-Leader. RQ5 asks if the perception of the presence of Thought-Leaders affects how students assessed the quality of the discussion boards, and RQ6 asks if there are any common factors that identify Thought-Leaders. These questions focus around asking what characteristics students feel are important for Thought-Leaders, how important it is for students to feel that such Thought-Leaders are present and how may such Thought-Leaders be identified, one part of which involves asking if there is a connection between certain student characteristics and how esteemed they are. It is impossible to answer these questions without knowing exactly which students are regarded by their peers as Thought-Leaders. To gather this information Questionnaire 2 asked students to explicitly name those that they felt were most important to the online discussions

Students were asked to name the participants in the discussion board that they felt were most important to discussion quality. Five students volunteered opinions on who they considered to be the most important participants, students were not allowed to vote for themselves. Both S14 and S17 voted so all 4 students who could vote for S14 and S17 did so. S14 and S17 are Thus, regarded as strong Thought-Leaders in terms of student recognition. Two students voted for S7, S7 is Thus, regarded as a weak student recognized Thought-Leader. S1, S2, S4, S8, S10, S19 and S20 each received one vote.

These last students are regarded as marginal Thought-Leaders in terms of student recognition.

Table 4.2 lists the participants nominated by their peers as Thought-Leaders for course IS-1A and how strong a Thought-Leader each was considered to be.

Table 4.2 Thought-Leaders for Course IS-1A

Student	Thought-Leader Type	Chosen by
S14	Strong	Unanimous choice
S17	Strong	Unanimous choice
S7	Weak	chosen by 2 peers
S1	Marginal	chosen by 1 peer
S2	Marginal	chosen by 1 peer
S4	Marginal	chosen by 1 peer
S8	Marginal	chosen by 1 peer
S10	Marginal	chosen by 1 peer
S19	Marginal	chosen by 1 peer
S20	Marginal	chosen by 1 peer

4.5 RQ1.To what extent do student behaviors (role-behaviors and social engagement) affect quality of online discussion?

4.5.1 RQ1a. To what extent do different role behaviors affect quality of online discussion?

4.5.1.1 Waters and Gasson role behaviors and quality measures

A single dominant role-behavior for each message was considered too crude a measure as it can hide a range of different role-behaviors. Thus, to effectively examine the incidence of different types of role-behaviors it was necessary to have a finer grained unit of analysis. Consequently, each message was split into a number of thematic units using a method derived by Henri (1991), these will be referred to as segments for simplicity. Under Henri's scheme a segment is a single unit of meaning that contains a single logically coherent idea or a complete chain of argument or concept. Adapting this approach to the Waters and Gasson scheme involves coding logically identifiable separate instances of the role-behaviors described by Waters and Gasson (2005). This method allows a much richer picture of the different types of role-behaviors. For instance, a message that might have been coded as having a dominant role-behavior type of Contributor might hide some small but very important facilitating behaviors.

In the Waters and Gasson scheme each segment can show one of seven active types of interaction behavior, Initiator, Contributor, Vicarious-Acknowledger, Facilitator, Complicator and Closer.

4.5.1.2 Quantifying segment types

Table 4.3 indicates the frequency of occurrence each type of role-behavior in the threads chosen for analysis, i.e., how many segments were coded as each of the different role-behaviors. The table also shows a numerical value assigned to each role-behavior, Facilitator, Complicator and Closer segments are regarded as quality segments in the Waters and Gasson scheme, assigning a numerical value will allow for the use of a Waters and Gasson quality measure calculated as the total number of Facilitator, Complicator and Closer segments multiplied by 4. This will be used later on for calculating concordances between the Waters and Gasson scheme and the Anderson and Krathwohl scheme.

Table 4.3 Frequency of segments types

Behavior Name	Assigned Value	Frequency of segments
Initiator	1	0(0.00%)
Vicarious-Acknowledger	2	117(19.90%)
Peer Knowledge elicitor	2	36(6.12%)
Contributor	3	201(34.18%)
Facilitator	4	158(26.87%)
Complicator	4	62(10.54%)
Closer	4	14(2.38%)
Total		588(100%)

Message segments which fit none of these categories are coded as null.

Facilitator, Complicator and Closer segments are rated more highly as they attempt to draw out debate, reframe debate or synthesize a final answer. These three categories are referred to as quality segments.

There were a total of 588 segments in the messages coded. 60% of segments were in the lower 4 categories, of which (34%) were Contributor segments and almost 20% were vicarious-acknowledger segments. Of the quality segments the vast majority were facilitator segments.

4.5.1.3 Waters and Gasson quality rank

To assess the importance of different role-behaviors involves examining the impact of different role-behaviors and aggregating the role-behaviors regarded as high-quality (Facilitator, Complicator and Closer) to provide a single measure of the Waters and Gasson quality of a participant,. This can be used to examine the importance of such behaviors by examining this quality measure against measures of thread quality and measures of participant quality as assessed by other means.

To gain a view of participant quality according to the Waters and Gasson scheme one can examine the following different variables.

Total Quality Segments (Facilitator, Complicator, Closer)
Waters and Gasson quality (4 x the number of quality segments)
Average Quality per segment (Total quality/number of segments)
Average Quality per message (Total quality/ number of messages)

One can rank the participants according to the overall quality they contribute to the discussion for all the threads analyzed.

Table 4.4 lists the participants in course IS-1A and shows the extent to which each demonstrated Facilitator, Complicator and Closer behaviors. Each of these types of segments scores 4. So, for instance, subject S20 posted a total of 47 of these "quality" segments.

Table 4.4 Subjects ranked by Waters and Gasson quality

subject	Total Quality	Rank
S20	188	1
S17	88	2
S10	88	2
S19	72	4
S7	60	5
S11	52	6
S3	48	7
S1	48	7
S2	40	9
S14	40	9
S13	36	11
S24	32	12
S16	28	13
S8	24	14
S21	24	14
S9	20	16
S12	20	16
S6	12	18
S22	12	18
S15	12	18
S4	8	21
S23	8	21
S5	4	21
S18	4	21

4.5.1.4 Thread activity and Water and Gasson behavior types

This section relates to RQ1 by examining the extent to which student behaviors (role-behaviors) affect quality of online discussion. This section will examine the connection between the occurrence of different role-behaviors and measures of thread quality. Table 4.5 below shows for each thread the total number of segments and the number of segments of each different role-behavior type. This will be used to calculate the connection between different role-behavior types and thread quality using number of independent ideas (segments, see section 4.5.1.1) as a quality measure.

Table 4.5 Waters and Gasson segment types in threads

Thread #	Total Segments	Waters and Gasson quality Rank	Segments of each type					
			VA	PKE	Con	Facilitator	Complicator	Closer
1	38	1	9	6	9	9	4	1
2	26	3	8	2	10	2	2	1
3	30	6	10	0	4	5	7	1
4	30	7	4	0	9	10	4	3
5	34	2	9	0	16	8	0	1
6	33	5	6	0	12	6	9	0
7	23	4	1	0	11	7	2	2
8	31	8	2	5	9	10	1	1
9	33	10	0	7	19	4	3	0
10	28	9	3	0	7	12	5	1
11	17	15	3	0	8	5	1	0
12	13	16	6	1	3	3	0	0
13	11	19	1	1	1	7	0	0
14	10	13	4	1	1	4	0	0
15	24	18	2	2	13	7	0	0
16	32	12	9	0	7	10	5	1
17	24	16	9	0	13	4	0	0
18	23	13	6	0	6	9	1	1
19	29	11	4	0	0	17	8	0
20	18	21	4	0	4	8	2	0
21	14	20	2	1	2	7	2	0
22	11	22	3	3	5	0	0	0
23	4	23	3	1	0	0	0	1
24	8	25	0	0	4	4	0	0
25	12	24	3	0	7	2	0	0
26	6	26	2	0	0	2	2	0
27	7	27	1	0	3	1	1	0
28	3	31	0	0	1	1	1	0
29	7	28	1	0	0	4	1	1
30	7	28	1	0	2	4	0	0
31	2	32	0	1	1	0	0	0
32	6	30	1	0	5	0	0	0
total	588		117	31	192	172	61	15

VA= Vicarious-Acknowledger, PKE = Peer-Knowledge-Elicitor, Con=Contributor

Table 4.6 Correlations between total number of segments in a thread and number of each segment type in a thread

VA	PKE	Contributor	Facilitator	Complicator	Closer
0.63 df=30 p= 0.00	0.36 df=30 p= 0.04	0.72 df=30 p= 0.00	0.70 df=30 p= 0.00	0.63 df=30 p= 0.00	0.45 df=30 p= 0.01

VA= Vicarious-Acknowledger, PKE = Peer-Knowledge-Elicitor, Con=Contributor

Table 4.6 shows the correlations between different segment types in a thread and the total number of independent ideas (segments) in a thread; this is used as a measure of discussion quality (RQ1). The Facilitator segment has the strongest influence on overall thread quality of the three "quality" types (Facilitator, Complicator, and Closer) and of the same order of importance as contributor segments. The greatest impact is from the Contributor type segment. Notably both closer and Peer-Knowledge–Elicitor type segments show far less of a positive correlation. Asking questions does not seem to have the positive effect normally associated with it. Closer type segments also seem to show less power in continuing discussion, attempts to synthesize a final answer are less likely to encourage further discussion.

Table 4.7 Correlations between total number of messages in a thread and number of each segment type in a thread

VA	PKE	Contributor	Facilitator	Complicator	Closer
0.62	0.41	0.58	0.54	0.40	0.40
df=30	df=30	df=30	df=30	df=30	df=30
p=0.00	p=0.02	p=0.00	p=0.00	p=0.02	p=0.01

VA= Vicarious-Acknowledger, PKE = Peer-Knowledge-Elicitor, Con=Contributor

Table 4.7 shows the correlations between different segment types in a thread and the total number of messages in a thread; this is used as a measure of discussion quality (RQ1). Again the Facilitator segment shows the greatest ability to inspire a thread to lengthen of the "quality" segment types. Here it is possible to see that Vicarious-Acknowledger segments show slightly more influence in generating ongoing discussion.

4.5.1.5 Connection between Waters and Gasson quality and activity in top threads

For each student each segment in each message they posted was coded as one of the Waters and Gasson behavior types (Initiator, Vicarious-Acknowledger, Peer-Knowledge-Elicitor, Facilitator, Complicator and Closer). Each Facilitator, Complicator and Closer segment was regarded as a "quality" segment and assigned a value of 4. Thus, for each student a numeric value of quality according to the Waters and Gasson scheme can be calculated. This allows us to address RQ1 by asking if participants who score highly on *quality* role-behaviors are important in promoting quality discussion. To that end one can compare the presence of these high scorers in the threads judged best by conventional measures (see section 4.3.1) and see if there is a connection between a person's quality score and how frequently one appears in the objectively best threads.

Table 4.8 Connection between Waters and Gasson quality and activity in top threads

Subject	Waters and Gasson Quality segments	Waters and Gasson Quality total	Waters and Gasson Quality rank	Appearance in top 10 threads
S20	47	188	1	8/10
S17	22	88	2	3/10
S10	22	88	2	4/10
S19	18	72	4	6/10
S7	15	60	5	5/10
S11	13	52	6	3/10
S3	12	48	7	7/10
S1	12	48	7	4/10

Marginal Thought-Leader S20 appears in 8/10 top threads, S17 (Strong Thought-Leader) appears in only 3. S10 (marginal) appears in 4. S19 (marginal) appears in 6/10. S7 (Thought-Leader) appears in 5/10. S11 (not recognized as a Thought-Leader) appears in 3 threads. S3 (not recognized as a Thought-Leader) appears in 7. S1 (Marginal) appears in 4/10.

A total of 74 participants took part in these 10 threads. A random distribution would have each student participating in (on average) 3 of the top 10 threads. However three of the top 8 participants posted in well above the expected average (8, 7, and 6) number of top threads, one of the top 8 posted in 5 of the top 10 threads.

Also no participant from outside the top 8 (as above) posted in more than 4 of the top 10 threads and only 1 poster outside the top 8 (S13) posted in even 4 of the top 10 threads.

An important measure of discussion quality is the extent to which the discussion deepens rather than proceeding in a linear fashion. A thread in which participants pick up on ideas and develop them can be indicated by the extent to which threads branch (see section 3.6.1) showing participants engaged in deep discourse. RQ1 asks to what extent different role-behaviors affect discussion quality. Table 4.9 addresses this question by showing the extent to which different role-behaviors are shown to inspire branching.

Table 4.9 Branches inspired by different role-behaviors

Role-behavior of Segment	Frequency of segments	Branches inspired in isolation	Inspiring ratio	Branches inspired in combination
Initiator	0(0.00%)	0(0%)	0.000	0(0%)
Vicarious-Acknowledger	117(19.90%)	9(26.4%)	0.077	23(49%)
Peer Knowledge elicitor	36(6.12%)	2(5.9%)	0.055	13(28%)
Contributor	201(34.18%)	8(23.5%)	0.040	24(51%)
Facilitator	158(26.87%)	14(41.2%)	0.088	28(60%)
Complicator	62(10.54%)	0(0%)	0.000	13(28%)
Closer	14(2.38%)	1(2.9%)	0.071	6(13%)
Total	588(100%)	34(100%)		47(100%)

There were a total of 83 branches. Three were inspired by posts which had null content. Thirty-four branches were inspired by posts which contained a single segment type.

Where a message contained only a single segment type the most common branch inspiring segment type was the facilitator type with 14/34 branches started by a single segment type message. This indicates that the Facilitator type segment is much more likely to inspire peers to get more deeply engaged in discussion that other types of "contribution". Facilitator segments inspire 41% of branches but only represent 27% of segments. The ratio of the number of branches inspired to number of segments of a given type can be calculated; for simplicity this will be called the inspiring ratio. A higher number shows a greater ability to inspire branches, the Facilitator role-behavior shows the highest ratio (0.088) followed by Vicarious-Acknowledger segments (0.077)

The fact that Facilitator segments facilitate discussion more than other segment types would seem to indicate some validity for the Waters and Gasson role-behavior scheme. There were no messages which consisted solely of Complicator segments. Complicator segments made up 10.5% of all segments.

Forty-seven branches were inspired by posts which were a combination of multiple segment types. For these branch inspiring posts 60% included facilitator segments and 51% contained contributor segments. Complicator segments in combination with other segment types in a message showed only modest power to encourage deepening discussion. Closer segments were even less productive in terms of encouraging discussion.

4.5.1.6 Connection between Waters and Gasson role behaviors and influence in threads

To assess the relative importance of different role-behaviors in promoting quality online discussion (RQ1) one can look at the extent to which participants who demonstrate different patterns of role-behaviors actually influence discussion board threads. To do this one can look for concordance between the extent to which different participants exhibit the three higher levels of role-behaviors (Facilitator, Complicator and Closer) and roll this into an overall measure of quality (See section 4.5.1.3).One can then compare this quality measure with objective measures of influence in the discussion board.

There are a number of objective measures that can be used to assess relative importance of participants in the discussion threads. For this purpose a number of commonly used objective measures (Harasim 1989; Kumari 2001; Morris and Naughton 1999; Picciano 2002) were chosen.

- Number of Threads started (Thought-Leaders as triggers (Aviv et al. 2003))
- Number of messages in threads started (quality of threads started)
- Number of Participants in threads started (how much student engagement is inspired)
- Number of Branches inspired (how much deep engagement is inspired)
- Number of Messages following post (quality of discussion created by post)
- Number of Segments following post (quality of discussion created by post)

By ranking the students by each of the criteria above (allowing 24 for 1st place down to 1 for 24th place or zero if no activity in that category) this creates an overall picture of the connection between objective measures and Waters and Gasson quality scores. This is shown in Table 4.10. Overall S20 scores 144, S7 scores 134, S12 scores 130, S14 scores 125, S10 scores 124. S2 scores 117. So the objectively most influential participants are S20 followed by S7 with S12 and S14 in 3rd and 4th places. So two of the student

recognized Thought-Leaders (S7 and S14) were really highly influential but the (by far) most influential poster S20 was only regarded as a Thought-Leader by one respondent. S17 regarded by all respondents as a Thought-Leader played a relatively average part.

Table 4.10 Connection between objective measures and Waters and Gasson scores

Influence Rank	Subject	Influence Score	Waters and Gasson Quality score	Waters and Gasson Rank
1	S20	144	188	1
2	S7	134	60	5
3	S12	130	20	16
4	S14	125	40	9
5	S10	124	88	2
6	S2	117	40	9
7	S9	109	20	16
8	S21	90	24	14
9	S1	87	48	7
10	S17	77	88	2

Table 4.10 shows that seven of the highest scores according to the Waters and Gasson scheme are also in the top 10 most influential participants. Of the most objectively influential participants in the discussion board most can be characterized as showing strong levels of Facilitator, Complicator and Closer behaviors. This implies that these role-behaviors are important in promoting high-quality discussion.

The Correlation between discussion promoting quality and Waters and Gasson quality rating is 0.65 (df=22, p=0.00). This indicates that the Waters and Gasson scheme shows a strong relationship with actual influence in the discussions where high-quality on the Waters and Gasson scheme is highly correlated with high influence in discussion boards.

The correlation between number of quality segments posted and number of quality segments inspired is 0.81 (df=22, p=0.00), the more quality a person contributes to the discussion the more quality is inspired.

4.5.1.7 Student assessment of most influential participants vs. Thought-Leader status

Students showed only an average ability to recognize the participants who had most objective influence in promoting discussion. S20 was only nominated by one student. S7 who was considered a weak Thought-Leader, performed better than S14 in objective terms. S17, however, who was highly influential, was also recognized as a strong Thought-Leader.

4.5.2 RQ1b. To what extent does Social engagement affect quality of online discussion?

Social engagement measures the extent to which participants are iteratively involved in discussions. Thus, investigating not only where individual students post more frequently in the same thread, which indicates a higher level of engagement with the discussion and but also how this iterative interaction leads to deepening discussion in the form of threads branching. This can be assessed by measuring the number of messages that occur in these deepening (iterative) branches (MIB). A thread is said to branch when a message inspires a direct reply; however, multiple replies at the same level do not show deepening discussion Iterative branches (IB) however are branches where one or more participants post multiple times and when these posts show a pattern of deeper level responses. This measure can be used to assess a level of social engagement (SE) both for individual threads and for the participants in threads.

It is also possible to assess the percentage of the total number of messages in a thread that occur in such Iterative branches (PIB) which is a measure of how consistently deep inquiry is for that thread and can assess the number of messages per participant within the iterative branches (MP) which indicates the extent to which each participant is deeply committed to the discussion. To quantify a measure of social engagement (SE) we can use MIB x PIB x MP.

These analyses can be used to make direct comparisons with the measures of discussion quality discussed earlier.

Table 4.11 shows for each thread how many iterative branches (See 4.5.2) there were, how many messages appeared in these branches, the average number of messages per branch and which participants were active in these threads including how many messages they posted in such branches. For instance S20 posted 6 messages in iterative branches.

Table 4.11 Participants in Socially Engaged threads

Thread Number	Iterative branches	Messages in branches	Messages/ Branch	Participants/messages in branches
1	4	12	3	S20(6), S7(3), S13(1), S15(1), S19(1)
2	2	10	5	S14(3), S17(2),S12(1). S20(2), S10(1), S19(1)
3	2	5	2.5	S20(3), S13(1), S1(1)
4	4	9	2.25	S20(5), S7(1), S10(1), S3(1), S17(1)
5	2	5	2.5	S15(2), S10(2), S2(1)
6	2	7	3.5	S20(3),S11(1),S8(1),S6(1),S13(1)
7	2	8	4	S20(3),S7(1),S2(1),S1(1),S14(1),S22(1)
8	2	6	3	S7(3),S12(1),S10(1),S20(1)
9	2	6	3	S2(3),S19(2),S7(1)
10	1	4	4	S14(2),S2(1),S17(1)
11	1	4	4	S21(2),S22(1),S19(1)
12	3	9	3	S2(4),S6(1),S10(1),S8(1),S4(1),S15(1)
13	3	9	3	S7(3),S20(3),S14(2),S19(1)
14	1	8	8	S12(4),S20(1),S10(1),S13(1),S1(1)
17	1	3	3	S24(2),S10(1)
18	1	3	3	S11(2),S3(1)
19	3	8	2.67	S17(4),S6(1),S20(1),S10(1),S14(1)
21	1	5	5	S20(2),S9(2),S6(1)
22	2	5	2.5	S12(3),S9(1),S19(1)
23	1	5	5	S7(2),S20(1),S17(1),S23(1)

Table 4.11 above shows the level to which each of the threads examined shows evidence of social engagement and which participants are active in each thread. From this information it is possible to derive both a measure of overall social engagement for each thread (a measure of how much deep inquiry there is in each thread) and the extent to which different individuals are more socially engaged (iteratively committed to social knowledge building).

4.5.2.1 Social Engagement of threads

Table 4.12 Threads ranked by Social Engagement (SE)

Thread Number	IB	MIB	Messages In thread	PIB	Messages/ Branch	Number of Participants	MP	SE
1	4	12	15	80%	3	5	2.40	23.04
13	3	9	9	100%	3	4	2.25	20.25
4	4	9	11	82%	2.25	4	2.25	16.57
2	2	10	12	83%	5	6	1.67	13.89
12	3	9	9	100%	3	6	1.50	13.50
19	3	8	8	100%	2.67	5	1.60	12.80
14	1	8	9	89%	8	5	1.60	11.38
7	2	8	11	73%	4	6	1.33	7.76
6	2	7	9	78%	3.5	5	1.40	7.62
9	2	6	10	60%	3	3	2.00	7.20
22	2	5	6	83%	2.5	3	1.67	6.94
23	1	5	5	100%	5	4	1.25	6.25
21	1	5	7	71%	5	3	1.67	5.95
8	2	6	10	60%	3	4	1.50	5.40
3	2	5	11	45%	2.5	3	1.67	3.79
5	2	5	11	45%	2.5	3	1.67	3.79
10	1	4	9	44%	4	3	1.33	2.37
11	1	4	9	44%	4	3	1.33	2.37
17 & 18	1	3	8	38%	3	2	1.50	1.69

Table 4.12 gives an overall social engagement rating for the threads under study. Social engagement is calculated by MIB x PIB x MP, for explanations of these terms and IB see section 4.5.2.

4.5.2.2 Highest social engagers

S20 = 31 messages in 22 iterative branches
S7 = 14 messages in 11 iterative branches
S2 = 10 messages in 8 iterative branches
S14 = 9 messages in 5 iterative branches
S17 = 9 messages in 6 iterative branches
S12 = 9 messages in 6 iterative branches
S10 = 9 messages in 8 iterative branches
S19 = 7 messages in 6 iterative branches
S13 = 4 messages in 4 iterative branches
S15 = 4 messages in 4 iterative branches
S6 = 4 messages in 4 iterative branches

4.5.2.3 Correspondence between Social Engagement and discussion promoting quality

Table 4.13 Social engagement and discussion promoting quality

Rank	Social Engagement	Discussion promoting quality
1	S20	S20
2	S7	S7
3	S2	S12
4	S14	S14
5	S17	S10
6	S12	S2
7	S10	S9

Table 4.13 shows the connection between the most socially engaged participants and the participants who have the greatest objective discussion promoting influence (See Section 4.5.1.6) There is a strong correspondence (6/7) between the strongest socially engaged participants and the most influential participants (section 4.5.1.6) . Participants who engage in the greatest amount of in-depth discussion within threads are also the participants who are most influential in starting and maintaining objectively high-quality discussions (see Table 4.10).

4.5.2.5 Connection between high social engagement and other quality measures

Table 4.14 Social engagement vs. other quality measures

Rank	Waters and Gasson Quality	Social Engagement	Discussion promoting quality
1	S20	S20	S20
2	S17	S7	S7
3	S10	S2	S12
4	S19	S14	S14
5	S7	S17	S10
6	S11	S12	S2
7	S3	S10	S9

Table 4.14 lists the best participants in the discussions according to Social Engagement and discussion promoting power (See Section 4.5.1.6).There is a strong correspondence (6/7) between the strongest socially engaged participants and the strongest participators as measured by how they can promote discussion. The same participants who show greatest social engagement are frequently the same participants who are objectively important for promoting discussion. Similarly, there is a strong correspondence between the Social Engagement and Waters and Gasson schemes (6/7). Highly socially engaged participants are also more often than not those who show greatest levels of Facilitator, Complicator and Closer role-behaviors.

Table 4.15 Thread quality and Social Engagement thread quality

Thread Number	Messages	Max Depth	Participants	Segments	Overall quality rank	Social Engagement
1	15	5	8	38	1	23.04
5	11	4	9	34	2	3.79
2	12	7	8	26	3	13.89
7	11	6	9	23	4	7.76
6	9	5	7	33	5	7.62
3	11	3	9	30	6	3.79
4	11	3	7	30	7	16.57
8	10	4	6	31	8	5.4
10	9	4	7	28	9	2.37
9	10	4	4	33	10	7.2
19	8	6	5	29	11	12.8
14	9	9	5	10	13	11.38
18	8	3	8	23	13	1.69
11	9	4	6	17	15	2.37
12	9	4	6	13	16	13.5
17	8	3	7	24	16	1.69
13	9	5	4	11	19	20.25
21	6	6	4	14	20	5.95
22	6	5	3	11	22	6.94
23	5	5	4	4	23	6.25

Having examined the extent to which individuals' social engagement relates to other measures of influence, it is now necessary to examine if levels of social engagement on a

thread by thread basis are connected with objective measures of thread quality as discussed earlier. Table 4.15 shows the objective measures of quality (segments, maximum thread depth, messages and number of participants) for each thread and the social engagement for that thread (see section 4.5.2).

The correlation between Social Engagement of a thread and the number of segments in a thread was 0.03 (df=18, p=0.88), the extent to which a thread branches deeply is not related to the number of ideas presented in that thread. Thread depth as a quality measure may, thus, not be indicative of thread quality.

The correlation between Social Engagement and the number of messages in a thread was 0.43 (df=18,p=0.04). As threads get longer they are more likely to show deeper branching as ideas are discussed iteratively.

4.6 RQ2.To what extent do student behaviors (role-behaviors and social engagement) affect learning outcomes.

4.6.1 RQ2a.To what extent do student behaviors affect learning outcomes.

This section explores the relationship between different role-behaviors and learning outcomes. The fundamental question revolves around the extent to which different role-behaviors contribute to high-quality learning outcomes. To assess learning outcomes I used Anderson and Krathwohl's (2001) taxonomy. This taxonomy focuses on the cognitive processes involved in manipulating and using different forms of knowledge as outlined in "*A Taxonomy for Learning, Teaching and Assessing*" (2001). This taxonomy is a revision of Bloom's taxonomy of educational objectives (1951).

The Knowledge Dimension	The Cognitive Process Dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge						
Conceptual Knowledge						
Procedural Knowledge						
Meta-cognitive Knowledge						

Figure 4.2 Anderson and Krathwohl's cognitive dimension

The Anderson and Krathwohl taxonomy (Figure 4.2) divides learning into two dimensions Knowledge and Cognitive Processes. The scheme will be using only the Cognitive Processes dimension; the focus is on the manipulation or creation of knowledge not the exact form of knowledge.

The cognitive dimension distinguishes the way that participants interact with knowledge. Such interaction can be of six different types.

- Remember – Recognize or Recall
- Understand – Interpret, Exemplify, Classify, Summarize, Infer, Compare, Explain
- Apply – Execute, Implement (choose law or procedure or model)
- Analyze – Differentiate, Organize, Attribute (determine POV etc)
- Evaluate – Check (does it follow), Critique (determine which is better)
- Create – Generate hypothesis, Plan, Produce

4.6.1.1 Applying Anderson and Krathwohl's coding scheme

A single dominant cognitive type for each message was considered too crude a measure as it can hide a range of different contributions, Thus, to effectively examine the incidence of different types of cognitive behaviors it was necessary to have a finer grained unit of analysis. Consequently each message was split into a number of thematic units using a method derived by Henri (1991), these will be referred to as segments for simplicity. Under Henri's scheme a segment is a single unit of meaning that contains a single logically coherent idea or a complete chain of argument or concept. Adapting this approach to the Anderson and Krathwohl scheme involves coding logically identifiable separate instances of the cognitive behaviors. This method allows a much richer picture of the different types of cognitive processes. For instance a message that might have been coded as having a dominant cognitive behaviors of Understand (low-level) might hide some small but very important examples of analytical (high level) behaviors.

In the Anderson and Krathwohl scheme each segment can show one of six active types of cognitive behavior. These behaviors and their subtypes are shown in table 4.16 below. Behavior subtypes are included in the Anderson and Krathwohl scheme but were only

used in a documentary sense as the important distinctions are between incrementally more complex cognitive behaviors. Anderson and Krathwohl do not consider any subtypes to be of greater cognitive importance than any others.

Table 4.16 Anderson and Krathwohl cognitive behaviors and subtypes

Cognitive behavior and subtype		Description
Remember		The lowest level of cognitive process and refers to extracting knowledge from memory.
Subtype	Recognize	Retrieving knowledge from long term memory that relates to presented material.
Subtype	Recall	This is prompted retrieval of relevant knowledge. Information is searched for in memory to fit a request (explicit or derived)
Understand		To construct meaning from supplied material – building connections between old knowledge and new knowledge
Subtype	Interpret	Converting information from one form to another – paraphrasing, describing a picture in words, creating a diagram from words, changing words to numbers...
Subtype	Exemplify	Stating or producing a specific example of a general concept or principle
Subtype	Classify	The reverse of exemplifying. A specific example is placed within a general concept or principle
Subtype	Summarize:	Creating a short description or abstracting general themes or main points from information
Subtype	Infer:	This means finding a pattern within a set of examples or abstracting a principle that explains examples.
Subtype	Compare	Detecting differences or similarities between two or more objects, events, ideas, problems or situations.
Subtype	Explain	Constructing or using a cause and effect model of a system
Apply		Using procedures to perform a task or solve a problem
Subtype	Execute	Carrying out a procedure relating to familiar tasks
Subtype	Implement	(law or procedure or model): Selecting and using a procedure to perform an unfamiliar task.
Analyze		breaking material into parts and determining how the parts form an overall structure
Subtype	Differentiate	This means determining which parts of a structure are relevant or unimportant
Subtype	Organize	Building coherent connections between pieces of information
Subtype	Attribute	Ascertaining the point of view, biases, values or intents in a communication, determine POV etc
Evaluate		Making judgments about material presented based on certain criteria such as consistency, efficiency and so on
Subtype	Checking	assessing if inconsistencies or fallacies exist in materials. E.g., when a product, conclusion or hypothesis does or does not follow

		from the supplied information or if data supports or does not support a hypothesis
Subtype	Critiquing	Judging a product or operation or argument based on a set of criteria – noting positive or negative features of a product or message
Table 4.16 Anderson and Krathwohl cognitive behaviors and subtypes (continued)		
Create		Putting elements together to create a coherent whole; this can include reorganizing an existing model. Something new is created – it can be a new set of hypotheses, a new plan for a solution or a new product
Subtype	Generating	Arriving at alternatives or hypotheses that meet certain criteria with regard to a problem
Subtype	Planning	Devising a single solution that fits with a problem. This solution may not solve the problem but outlines a method and steps to how the problem could be solved.
Subtype	Producing	Carrying out a plan for solving a problem

4.6.1.2 Assigning values to Anderson and Krathwohl segment types

Anderson and Krathwohl's cognitive dimension is typically represented as a pyramid (Figure 4.3) where "Create" is the pinnacle of cognitive activity and "Remember" is the base of the pyramid.
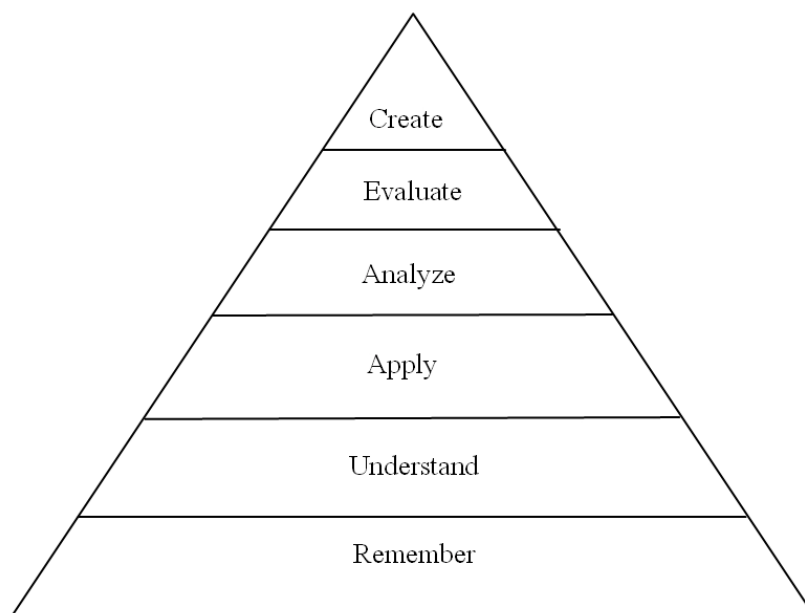
Figure 4.3 Anderson and Krathwohl's scheme as a pyramid

Since Anderson and Krathwohl consider each successive level to be cognitively more challenging than the previous one it seems fair to ascribe incrementally higher values to each level of the pyramid. Thus, each segment as well as being coded as a behavior type is also numerically scored according to the scheme outlined in Table 4.17. This scoring will make direct comparisons easier. Analyze, Evaluate and Create behaviors are referred to here as *quality* behaviors as they represent higher levels of independent thought beyond merely remembering, understanding and applying rules.

Table 4.17 Assigning values to Anderson and Krathwohl segment types

Cognitive Type	Score
Remember	1
Understand	2
Apply	3
Analyze	4
Evaluate	5
Create	6

Approximately 49% of segments posted fall in the top three categories (Analyze, Evaluate, and Create) These segments are regarded as quality segments and the scores for these can be aggregated to give an overall quality score on a thread or message basis.

With the Anderson and Krathwohl scheme it is possible to measure overall learning outcomes in terms of both overall cognitive activity and activity in the higher (quality) cognitive behavior types (Analyze, Evaluate and Create).

Table 4.18 shows a summary for each thread in terms of Waters and Gasson and Anderson and Krathwohl measures. It shows the different role-behaviors (Waters and

Gasson) and overall Waters and Gasson quality (as measured by the number of Facilitator, Complicator and closer segments multiplied x 4), the overall cognitive activity (Anderson and Krathwohl) derived by adding the scores for each segment (see table 4.17) and the Anderson and Krathwohl quality score which is derived by adding the scores for the Analyze, Evaluate and Create segments in each thread.

Table 4.18 Threads described by Anderson and Krathwohl and Waters and Gasson schemes

Thread Number	Anderson and Krathwohl		Waters and Gasson segment types (role-behaviors)						
	Activity	Quality	VA	PKE	Con	Facilitator	Comp	Closer	Quality Total
1	93	63	9	6	9	9	4	1	56
2	56	32	8	2	10	2	2	1	24
3	58	65	10	0	4	5	7	1	48
4	93	65	4	0	9	10	4	3	68
5	69	30	9	0	16	8	0	1	32
6	118	91	6	0	12	6	9	0	60
7	45	25	1	0	11	7	2	2	44
8	72	59	2	5	9	10	1	1	56
9	72	40	0	7	19	4	3	0	28
10	61	60	3	0	7	12	5	1	64
11	50	30	3	0	8	5	1	0	32
12	37	26	6	1	3	3	0	0	12
13	37	31	1	1	1	7	0	0	28
14	30	29	4	1	1	4	0	0	20
15	81	50	2	2	13	7	0	0	28
16	109	81	9	0	7	10	5	1	72
17	53	23	9	0	13	4	0	0	16
18	84	66	6	0	6	9	1	1	44
19	141	131	4	0	0	17	8	0	100
20	69	55	4	0	4	8	2	0	40
21	32	30	2	1	2	7	2	0	8
22	37	33	3	3	5	0	0	0	8
23	2	0	3	1	0	0	0	1	12
24	22	10	0	0	4	4	0	0	4
25	28	10	3	0	7	2	0	0	8
26	31	27	2	0	0	2	2	0	16
27	19	11	1	0	3	1	1	0	8
28	14	12	0	0	1	1	1	0	8
29	27	21	1	0	0	4	1	1	8
30	26	22	1	0	2	4	0	0	16
31	2	0	0	1	1	0	0	0	0
32	13	5	1	0	5	0	0	0	0

VA= Vicarious-Acknowledger, PKE = Peer-Knowledge-Elicitor, Con=Contributor

The correlation between the Waters and Gasson quality measure and the Anderson and Krathwohl quality total is 0.92 (df=30,p=0.00). As the quality of a thread in terms of Facilitator, Complicator and Closer segments goes up so do its outcomes in terms of Analyze, Evaluate and Create segments. Thus, the quality role-behaviors from the Waters and Gasson scheme (Facilitator, Complicator and Closer) are very highly connected to high-quality learning outcomes.

Table 4.19 Correlations between Waters and Gasson segments and Anderson and Krathwohl quality

Facilitator	Complicator	VA	Contributor	Closer	FComp
0.83	0.82	0.44	0.18	0.22	0.93
df=30	df=30	df=30	df=30	df=30	df=30
p=0.00	p=0.02	p=0.01	p=0.30	p=0.22	p=0.00

VA= Vicarious-Acknowledger, FComp = facilitator and Complicator

The correlation between the number of Waters and Gasson Facilitator segments measure and the Anderson and Krathwohl quality total is 0.83 (df=30,p=0.00). As the number of Facilitator segments goes up so do its outcomes in terms Analyze, Evaluate and Create segments.

The correlation between the number of Waters and Gasson Complicator segments measure and the Anderson and Krathwohl quality total is 0.82 (df=30,p=0.00) As the number of Complicator segments goes up so do its outcomes in terms of Analyze, Evaluate and Create segments.

The correlation between the number of Waters and Gasson Vicarious-Acknowledger segments measure and the Anderson and Krathwohl quality total is 0.44 (df=30,p=0.01).

This is a somewhat larger relationship than anticipated and indicates that these segments show some power in encouraging high-quality cognitive outcomes.

The correlation between the number of Waters and Gasson Contributor segments measure and the Anderson and Krathwohl quality total is 0.18 (df=30, p=0.=30). This is a weak relationship and not statistically significant. Contributor segments represent a minimal contribution to a thread that does no alter its direction. This result is quite expected.

The correlation between the number of Waters and Gasson Closer segments measure and the Anderson and Krathwohl quality total is 0.22 (df=30,p=0.22) . This is a much smaller relationship than might have been anticipated and indicates that closer segments show little power in encouraging high-quality cognitive outcomes.

By combining Facilitator segments and Complicator segments into one measure (FCOMP) the correlation between these segments and the Anderson and Krathwohl quality total is 0.93 (df=30, p= 0.00).

Comparing the frequency of Anderson and Krathwohl segments to Waters and Gasson segments three interesting correlations were found. The correlation between Contributor and Understand segments was 0.79 (df=30,p=0.00), both represent low level contributions in each scheme. The correlation between Facilitator and Creator segments was 0.64 (df=30,p=0.00) and the correlation between Complicator and Create segments

was 0.61 (df=30,p=0.01). The presence of Facilitator and Complicator segments is highly

connected with the highest possible cognitive outcomes (Create).

4.6.1.3 Participant Quality measured by Anderson and Krathwohl and Waters and Gasson

Having examined the connection between the Waters and Gasson scheme and Anderson

and Krathwohl scheme on a thread basis it is worth examining it on an individual basis.

This explores the question about the extent to which an individual demonstrating high

levels of quality role-behaviors (Facilitator, Complicator and Closer) (Table 4.21) also

contributes high levels of cognitive quality (Analyze, Evaluate and Create) (Table 4.20).

To do so will examine the Waters and Gasson quality and Anderson and Krathwohl

quality scores for each individual. Table 4.20 shows how much each participant

contributed according to the Anderson and Krathwohl scheme. The tables show messages

posted, number of segments in the messages posted, how many segments were Analyze,

Evaluate or Create segments (Quality segments), the total numerical score for these

quality segments (Analyze = 4, Evaluate = 6 and Create = 6) , the average quality per

segment and per message (Total quality divided by messages posted)

Table 4.20 Anderson and Krathwohl participant quality

Participant	Messages	Segments	Quality segments	Quality Total	Average Segment Quality	Average message Quality
S20	33	69	39	183	2.65	5.55
S17	10	25	21	118	4.72	11.80
S10	16	45	19	101	2.24	6.31
S19	17	44	17	90	2.05	5.29
S11	8	25	14	76	3.04	9.50
S1	9	33	13	71	2.15	7.89
S7	21	23	14	67	2.91	3.19
S13	9	18	14	67	3.72	7.44
S2	18	24	10	50	2.08	2.78

S9	6	16	10	48	3.00	8.00
Table 4.20 Anderson and Krathwohl participant quality (continued)						
S24	6	18	9	47	2.61	7.83
S14	9	20	9	36	1.80	4.00
S3	9	17	21	34	2.00	3.78
S12	14	21	7	33	1.57	2.36
S21	5	12	5	29	2.42	5.80
S16	6	7	5	29	4.14	4.83
S15	8	17	5	27	1.59	3.38
S8	5	12	4	20	1.67	4.00
S6	7	9	2	10	1.11	1.43
S22	8	9	2	10	1.11	1.25
S18	1	1	1	6	6.00	6.00
S4	5	5	1	5	1.00	1.00

Table 4.21 shows how much each participant contributes measured by Waters and Gasson's scheme. The table shows the number of messages posted, the number of segments in the messages posted, how many segments were coded as each of the Waters and Gasson role-behavior types (Facilitator, Complicator and Closer segments are described as Quality segments) and the total numerical score for these quality segments (4 x number of quality segments).

Table 4.21 Waters and Gasson participant quality

Subject	Messages	Segments	VA Segs	PKE Segs	Con Segs	Facilitator Segs	Complicator Segs	Closer Segs	Quality Total
S20	33	91	10	5	27	25	19	4	48
S10	16	53	5	0	23	16	5	4	25
S17	10	30	5	1	2	13	6	3	22
S19	17	50	13	3	17	13	3	1	17
S7	21	37	6	6	7	14	2	0	16
S11	8	28	5	0	10	12	1	0	13
S24	6	19	3	0	6	9	2	1	12
S14	9	26	0	1	13	9	2	1	12
S9	6	18	2	1	4	11	0	0	11
S3	9	19	4	0	4	9	2	0	11
S1	9	40	10	1	17	6	5	0	11
S2	17	36	6	6	14	8	2	0	10
S13	9	19	9	0	2	5	3	0	8
S8	5	16	6	0	4	2	4	0	6
S16	6	13	2	2	1	3	2	0	5
S21	5	12	3	0	5	4	0	0	4

S12	14	26	4	4	13	4	0	0	4
Table 4.21 Waters and Gasson participant quality (continued)									
S6	7	12	6	0	3	3	0	0	3
S22	8	14	5	0	6	3	0	0	3
S15	8	19	6	0	10	2	0	1	3
S4	5	7	3	0	2	0	2	0	2
S5	1	1	0	0	0	1	0	0	1
S18	2	3	2	0	0	0	1	0	1
S23	3	5	2	1	2	0	0	0	0

VA= Vicarious-Acknowledger, PKE = Peer-Knowledge-Elicitor, Con=Contributor, segs = segments

The correlation between Waters and Gasson quality and Anderson and Krathwohl quality is 0.95 (df=22,p=0.00). The correlation between number of facilitator segments posted and Anderson and Krathwohl quality is 0.92 (df=22,p=0,00). The correlation between Complicator segments and Anderson and Krathwohl quality is 0.83 (df=22,p=0,00). The correlation between Closer segments and Anderson and Krathwohl quality is 0.78 (df=22,p=0,00). Once again the connection between the frequency of (Facilitator, Complicator and Closer segments) and the quality of cognitive outcomes is very high.

4.6.2 RQ2b.To what extent does Social Engagement affect learning outcomes.

This section addresses the question of whether threads that exhibit deep branching necessarily show higher levels of cognitive outcomes. Do threads that show high levels of social engagement always demonstrate a connection between ostensibly deepening inquiry and greater levels of thought from participants? Table 4.22 shows the social engagement and cognitive quality for each thread.

Table 4.22 Social engagement and Cognitive outcomes

Thread Number	Anderson and Krathwohl Activity total	Anderson and Krathwohl quality total	Social Engagement
1	93	63	23.04
2	56	32	13.89
3	58	65	3.79
4	93	65	16.57
5	69	30	3.79
6	118	91	7.62
7	45	25	7.76
8	72	59	5.4
9	72	40	7.2
10	61	60	2.37
11	50	30	2.37
12	37	26	13.5
13	37	31	20.25
14	30	29	11.38
15	81	50	0
16	109	81	0
17	53	23	1.69
18	84	66	1.69
19	141	131	12.8
20	69	55	0
21	32	30	5.95
22	37	33	6.94
23	2	0	6.25

The correlation between Anderson and Krathwohl learning outcomes and Social Engagement was 0.03 (df=22, p=0.88). This indicates no notable relationship between the

level of social engagement in a thread and the quality of learning outcomes. Contrary to expectations, deep interactive branches with multiple contributions from participants do not lead to greater learning outcomes on a thread level.

4.6.2.1 Connection between Social Engagement and student grade

The correlation between student grade and the level of social engagement they displayed in threads (measured by messages in interactive branches) was insignificant at 0.27 (df=22, p=0.20). The correlation between student rank for discussion board and rank for social engagement was an insignificant 0.33 (df=22,p=0.12).

4.7 RQ3.To what extent do student behaviors (role-behaviors and social engagement) affect learning satisfaction.

4.7.1 RQ3a To what extent do role-behaviors affect learning satisfaction?

Ten students from course IS-1A volunteered an opinion on their satisfaction with the course and the value of the discussion board. Eight of those responding were in the top 10 Waters and Gasson quality slots hinting that these were more motivated students. Of the 10 respondents 3 described their satisfaction with the course as strong, six described it as moderate and 1 described it as weak. When asked about the discussion board two described their satisfaction with it as weak and 8 described their satisfaction with it as strong. High-quality participation in discussions boards does not seem to positively correlate with high satisfaction with the course. Of the 8 high-quality participants all but one reported strong satisfaction with the discussion board, however since there is little data from the weaker quality participants no real conclusions can be drawn from this. The participant who reported weak satisfaction was also the participant who posted the fewest facilitator segments.

4.7.2 RQ3b To what extent does social engagement affect learning satisfaction?

Ten students from course IS-1A volunteered an opinion on their satisfaction with the course and the value of the discussion board. Of these 7 were in the top 10 social engagement slots, suggesting that these were highly motivated students. No pattern was found between level of social engagement and reported satisfaction with the course. For instance S20 the top ranked student in terms of social engagement reported only weak satisfaction with the course, while S7 (ranked no 2) reported moderate satisfaction, S2 (ranked no 3) reported moderate satisfaction, S14 (ranked no 4) and S17 (ranked no 5)

reported strong satisfaction. All seven of the top 10 social engagement students who responded reported strong satisfaction with the discussion board. Of the three remaining respondents (who were low social engagers) 2/3 reported weak satisfaction with the discussion board. These last two results may not be surprising since students who are getting deeply involved in interactions with peers in the discussion board are reporting that they were satisfied with the outcomes from the discussion board and those who did not get involved did not feel so.

4.8 RQ4.To what extent do student behaviors (role-behaviors and social engagement) concord with perceptions of students as Thought-Leaders?

This section investigates the relationship between the types and frequencies of role-behaviors that participants display and how these are related to the extent to which they are regarded as Thought-Leaders.

4.8.1 RQ4a.To what extent do role-behaviors concord with perceptions of students as Thought-Leaders?

Of the ten respondents to the second questionnaire only 5 volunteered opinions on who were the most important participants in the online discussion, students were not allowed to vote for themselves. Both S14 and S17 voted so all 4 students who could vote for S14 and S17 did so. S14 and S17 are Thus, regarded as strong Thought-Leaders in terms of student recognition. Two students voted for S7, S7 is Thus, regarded as a weak student recognized Thought-Leader. S1, S2, S4, S8, S10, S19 and S20 each received one vote. These last students are regarded as marginal Thought-Leaders in terms of student recognition.

S14	Strong (4)
S17	Strong (4)
S7	Weak (2)
S1	Marginal (1)
S2	Marginal (1)
S4	Marginal (1)
S8	Marginal (1)
S10	Marginal (1)
S19	Marginal (1)
S20	Marginal (1)

S14 posted a total of 9 messages in the 32 threads examined, this is exactly average, in those messages S14 posted a total of 26 segments which is also average 10 of these segments were coded as quality segments under the Waters and Gasson scheme this is

also exactly average giving a quality total of 40 (average). Thirty-four percent of S14's segments were facilitator segments this is slightly above average (29%) but several others posted a higher than average percentage of facilitator posts and were not recognized as Thought-Leaders (S5, S9, S3, S24, S11). S14 posted a lower than average percentage of Complicator posts. Two things stand out about S14, S14 posted the 2nd highest percentage of Contributor segments (50%) but zero Vicarious-Acknowledger segments. Not once did S14 post a segment which merely acknowledges a contribution, every segment contributed something substantive though many were minimal.

S17 posted a total of 10 messages in the 32 threads examined, this is average, in those messages S17 posted a total of 30 segments which is slightly above average (24.75) 22 of these segments were coded as quality segments under the Waters and Gasson scheme this was more than twice the average giving a quality total of 88 which is the third highest overall quality total. Forty-three percent of S17's segments were facilitator segments this is rather above average (29%) but several others posted a higher than average percentage of facilitator posts and were not recognized as Thought-Leaders (S5, S9, S3, S24, S11). S17 posted a much higher than average percentage of Complicator segments (20%), the average is 9.6%. S17 also posted the highest percentage of Closer segments (10%), the average is under 2%, these segments draw a discussion to a close by synthesizing a coherent answer from different arguments. S17 however did post a very low number of contributor segments (6.67%), the average is 29%.

S7 posted a total of 21 messages, over twice the average and these posts consisted of 37 segments which is about 50% more than average. Of these segments 16 were "quality" segments this is the 5th highest number and well over average. Approximately 38% of S7's segments were facilitator segments this is rather above average(29%) but several others posted a higher than average percentage of facilitator posts and were not recognized as Thought-Leaders (S5, S9, S3, S24, S11), S7 posted a lower than average percentage (5.4%) of Complicator segments.

The correlation between Waters and Gasson quality and Thought-Leader status was 0.4 (df=22, p=0.053) this is tantalizingly close to being significant and suggests a weak relationship between these constructs. However, the correlation between the number of Closer segments posted and Thought-Leader status was significant at 0.43 (df=22,p=0.043) so for these students there was a moderately significant relationship between the extent to which a participant attempted to synthesize a coherent answer and the extent to which they were regarded as a Thought-Leader.

4.8.2 RQ4b.To what extent does social engagement concord with perceptions of students as Thought-Leaders

This section investigates the relationship between the extent to which participants engage in deep iterative exchanges (Social Engagement) and how this is related to the extent to which they are regarded as Thought-Leaders. Section 4.8.2.1 lists the highest social engagers and section 4.8.2.2 lists student recognized as Thought-Leaders.

4.8.2.1 Highest social engagers

S20 = 31 messages in 22 iterative branches
S7 = 14 messages in 11 iterative branches
S2 = 10 messages in 8 iterative branches
S14 = 9 messagesin 5 iterative branches
S17 = 9 messagesin 6 iterative branches
S12 = 9 messagesin 6 iterative branches
S10 = 9 messagesin 8 iterative branches

4.8.2.2 Student recognized Thought-Leaders (nominations in parentheses)

S14   Strong (4)
S17   Strong (4)
S7   Weak (2)
S1   Marginal (1)
S2   Marginal (1)
S4   Marginal (1)
S8   Marginal (1)
S10   Marginal (1)
S19   Marginal (1)
S20   Marginal (1)

The picture here is patchy. All three of the (non marginal) student recognized Thought-Leaders are also high social engagers though S7 (weak) is more active than S14 (Strong) and S17 (Strong), S14 and S17 show very similar patterns of social engagement. S20 the strongest social engager by a substantial margin (31 messages to S7's 14) was only recognized as a Thought-Leader by one student. S2 (marginal) and S10 (marginal) also show up in the top ranks of social engagers.

The correlation between Thought-Leaders status and Social engagement was 0.4 (df=22, p=0.055) this is not significant but is close to significance, indicating a possible weak relationship.

4.9 RQ5.Does the perception of presence of Thought-Leaders affect student perceptions of quality of online discussion?

This section investigates the extent to which the perception of having certain Thought-Leaders present in an online discussion affects students' perceptions with regard to how well their expectations were met, how satisfied they were with an online course and how much they believe they have benefited from online discussions.

The post course questionnaire asked the following questions:

1. My **expectations** for this course were met
2. Overall I was **satisfied** with this course
3. I found the online discussion board to be a **valuable** part of this course
4. The online discussion contributed to my having a greater **understanding** of the topic
5. I frequently found myself in a strong leadership role in the online debate

Students were asked to answer each question using a 5 point likert scale, answers were scored as follows

Strongly Agree(4) -   Agree(3)-   Undecided (2) – Disagree(1) - Strongly Disagree(0).

A final open question asked

6. Apart from yourself who else did you feel were the most important contributors to the online debate (Thought-Leaders)

Results from question 6 were aggregated and for each course a number of Thought-Leaders reported was generated, this was used as the independent variable for a ANOVA using "Expectations", "Satisfied", "Valuable" and "Understanding" as dependent variables.

4.9.1 Presence of Thought-Leaders and dependent variables

Table 4.23 shows the mean values for dependent variables "expectations met", "course satisfaction", "value of discussion board" and "contribution of discussion board to understanding" against the number of Thought-Leaders reported. A higher value represents a greater level of agreement with the statement in column 1 (maximum = 4)..

Table 4.23 Presence of Thought-Leaders and student feedback

	Number of Thought-Leaders Reported	Mean	Std. Deviation	N
My expectations for this course were met	2	3.55	.572	29
	3	3.50	.516	16
	4	3.18	1.014	33
	5	2.79	.940	29
	Total	3.22	.872	107
Overall I was satisfied with this course	2	3.48	.688	29
	3	3.50	.632	16
	4	3.21	.857	33
	5	2.83	.848	29
	Total	3.22	.816	107
I found the online discussion board to be a valuable part of this course	2	3.00	.756	29
	3	3.44	.814	16
	4	3.09	.980	33
	5	2.03	1.322	29
	Total	2.83	1.120	107
The online discussion contributed to my having a greater understanding of the topic	2	3.21	.620	29
	3	3.31	.873	16
	4	2.88	1.111	33
	5	2.14	1.246	29
	Total	2.83	1.094	107

The effect of "Number of Thought-Leaders reported" is significant for all four dependent variables at $p < 0.01$ as shown in Table 4.24.

Table 4.24 Significance for effect of Thought-Leaders

	Degrees of freedom	Mean Squares	F value	p	Degrees of freedom
Expectations	3	3.259	4.738	.004	3
Overall Satisfaction	3	2.574	4.216	.007	3
Value	3	9.114	8.887	.000	3
Understanding	3	7.271	7.121	.000	3

Table 4.24 shows the F values and significance of the effect of the number of Thought-Leaders reported

Where there are 2 or 3 Thought-Leaders reported by students the extent to which students felt their expectations of the course were met was greater than when there were 4 or 5 reported Thought-Leaders. Where there are 2 or 3 Thought-Leaders reported by students the level of reported overall satisfaction with the course was greater than when there were 4 or 5 reported Thought-Leaders. Where there are 2, 3 or 4 Thought-Leaders reported by students the perceived value of the discussion board was greater than when the number of Thought-Leaders reported was 5. Where there are 2 or 3 Thought-Leaders reported by students the perceived contribution to understanding of the discussion boards was greater than when the number of Thought-Leaders reported was 4 or 5.

Where there are 5 Thought-Leaders reported all four dependent variables, expectations, Overall Satisfaction, Value and Understanding show their lowest values.

4.9.2 Presence of strong Thought-Leaders and dependent variables

To be regarded as strong Thought-Leaders there must be a higher level of consensus between students. Students must be nominated by greater percentage of their peers and garner a minimum number of votes as below:

4.9.3 Definition of Strong Thought-Leaders

Nominated by 50% of respondents nominate with a minimum of 5 votes (i.e. 5/10)
Nominated by 57% of respondents nominate with a minimum of 4 votes (i.e. 4/7)
Nominated by 75% of respondents nominate with a minimum of 3 votes (i.e. 3/4)

Table 4.25 shows the mean values for dependent variables "expectations met", "course

satisfaction", "value of discussion board" and "contribution of discussion board to

understanding" against the number of strong Thought-Leaders reported. A higher value

represents a greater level of agreement with the statement in column 1 (maximum = 4)..

Table 4.25 Presence of strong Thought-Leaders and student feedback

	Strong Thought-Leaders Reported	Mean	Std. Deviation	N
My expectations for this course were met	0	3.32	.797	40
	1	3.03	.854	38
	2	3.45	.945	20
	3	3.11	1.054	9
	Total	3.22	.872	107
Overall I was satisfied with this course	0	3.30	.823	40
	1	2.95	.804	38
	2	3.60	.598	20
	3	3.22	.972	9
	Total	3.22	.816	107
I found the online discussion board to be a valuable part of this course	0	3.03	.920	40
	1	2.34	1.258	38
	2	3.35	.875	20
	3	2.89	1.167	9
	Total	2.83	1.120	107
The online discussion contributed to my having a greater understanding of the topic	0	3.12	.853	40
	1	2.39	1.152	38
	2	3.25	.910	20
	3	2.44	1.509	9
	Total	2.83	1.094	107

There was no effect of number of strong Thought-Leaders reported on the level to which

students felt their expectations of the course were met. The effect on the other three

dependent variables, however, was highly significant as shown in table 4.26.

Table 4.26 Significance for effect of strong Thought-Leaders

	Degrees of freedom	Mean Squares	F value	Significance
Expectations	3	1.010	1.340	.265
Overall Satisfaction	3	1.989	3.169	.028
Value	3	5.335	4.698	.004
Understanding	3	5.182	4.790	.004

Table 4.26 shows the significance of the effect of the number of reported strong Thought-Leaders on each of the dependent variables (n=107)

Where there are 2 strong Thought-Leaders reported by students the level of reported overall satisfaction with the course was greater than when the number of strong Thought-Leaders reported was 0, 1 or 3.

Where there are 2 strong Thought-Leaders reported by students the perceived value of the discussion board was greater than when the number of strong Thought-Leaders reported was 0, 1 or 3.

Where there are 2 strong Thought-Leaders reported by students the perceived contribution to understanding of the discussion boards was greater than when the number of strong Thought-Leaders reported was 0, 1 or 3.

4.10 RQ6.Are there any common factors that identify Thought-Leaders

This section investigates whether there are any common factors which may be used to

identify those participants deemed to be more important for online discussions

4.10.1 RQ6a.Are there any common factors that identify student recognized Thought-Leaders

To address this question I needed the following sources of information

- Which students were or were not regarded as Thought-Leaders by their peers
- What background information was known about each student, both Thought-Leaders and non Thought-Leaders
- What attitudes did students express at the beginning and end of the courses

I used two questionnaires to gather this data. The pre-course questionnaire collected

background data from students. The end of course questionnaire gathered attitudinal data

from students including asking each participant who they regarded as most influential in

the online discussion (Thought-Leaders).

In the first questionnaire I asked students about:

- Theoretical Knowledge of the domain (prior courses, undergraduate degrees)
- Professional Knowledge of the domain (years of experience)
- Other Professional experience (to compare those with real work experience vs. others)
- Attitude towards discussion boards

4.10.1.1 Questionnaire 1

1. What is your general background and what was your undergraduate major?

2. Tell us a little about your professional work history:
- What industry sector do you currently work in and how long you have been working in it?
- How many years of work experience do you have in total? Are they all in the same field?
- Have you changed career or are you planning to change career?

4. Do you have any experience of this topic area?

6. How many online courses have you taken prior to this one (at Drexel and elsewhere)? Do you prefer online learning to face to face learning? Why? Which was your favorite online course and why?

7. Why did you enroll for the Drexel Masters was it to change career, get a promotion, or some other reason?

8. What would you like to get out of THIS course?

9. An important part of this online course is a weekly question-driven discussion board. Do you enjoy collaborating in online discussion?

10. What is your age range?
_ 18 – 22
_ 23 – 30
_ 31 – 40
_ 41 – 50
_ 51 – 60
_ 61+
_ I prefer not to say

4.10.1.2 Coding of students answers.

Tables 4.27 thru 4.33 list the numeric values assigned to students for their quantifiable characteristics (level of education, theoretical knowledge of domain, professional experience in the domain, general professional experience, online learning experience, attitude towards discussion boards and age).

Table 4.27 Education

Existing level of Education	Value
Still an Undergraduate	0
Bachelors Degree	1
Graduate degree	2
Multiple Graduate degrees	3
Doctorate	4

Table 4.28 Theoretical knowledge

Theoretical Domain Knowledge (prior courses in this domain)	Value
None	0
1 -4	1
5 - 8	2
9 - 12	3
13 + (or prior degree)	4

Table 4.29 Professional experience in domain

Experience in years	Value
None	0
< 5 years	1
$\geq$ 5 years $\leq$ 10 years	2
$\geq$ 10 years $\leq$ 15 years	3
> 15 years	4

Table 4.30 General work experience (outside domain)

Experience in years	Value
None	0
< 5 years	1
$\geq$ 5 years $\leq$ 10 years	2
$\geq$ 10 years $\leq$ 15 years	3
> 15 years	4

Table 4.31 Prior online learning experience (including undergraduate degree)

Number of courses	Value
None	0
1 -4	1
5 - 8	2
9 - 12	3
13 + (or prior degree)	4

Table 4.32 Attitude towards discussion boards

Attitude	Value
Very Negative	0
Mildly Negative	1
Neutral	2
Mildly Positive	3
Highly Positive	4

Table 4.33 Age in years

Attitude	Value
18 - 22	0
23 - 30	1
31 - 40	2
41 - 50	3
51 - 60	4
61+	5

4.10.1.3 Questionnaire 2

The post course questionnaire asked the following questions:

1. My **expectations** for this course were met
2. Overall I was **satisfied** with this course
3. I found the online discussion board to be a **valuable** part of this course
4. The online discussion contributed to my having a greater **understanding** of the topic
5. I frequently found myself in a strong leadership role in the online debate

Students were asked to answer each question using a 5 point likert scale, answers were scored as follows

Strongly Agree(4) -   Agree(3)-   Undecided (2) – Disagree(1) - Strongly Disagree(0).

A final open question asked

6. Apart from yourself who else did you feel were the most important contributors to the online debate (Thought-Leaders?)

4.10.1.4 Assessing the level to which peers considered a participant to be a Thought-Leader

It was important to decide who students felt were Thought-Leaders and how strongly they were seen as Thought-Leaders by their peers. To assess this I examined student answers to question 6 in the second questionnaire. Question 6 was an open question which allowed students to name any individuals they felt to have been important in the online discussions. Students could vote for several peers as Thought-Leaders or for none if they felt that no individuals had contributed notably to the discussion.

I devised a Thought-Leadership ranking scheme based on
- The number of votes a participant received from peers
- The number of students who cast votes for peers in each course
- The percentage of voters who chose a given participant.

For a student to be regarded as a strong Thought-Leader there had to be a strong consensus amongst their peers. A student receiving 5 votes when there were 10 voters would be regarded as a stronger Thought-Leader than one who received 5 votes from a total of 20 voters. Similarly, a student receiving votes from 50% of 10 voters would be regarded as a stronger Thought-Leader than one who received votes from 50% of 5 voters. I chose this scheme so that the importance of a student who was voted Thought-Leader by 100% of one or two voters was not exaggerated. These criteria are represented in Table 4.34 below.

Table 4.34 Criteria for assessment of Thought-Leaders

Strong Thought-Leader	4 Points	
Minimum percentage of Voters nominating given student	Minimum number of Votes for that student	Votes/Voters
50%	5	5/10, 6/12, 7/14…
57%	4	4/7
75%	3	3/4
Moderate Thought-Leader	**3 Points**	
Minimum percentage of Voters nominating given student	Minimum number of Votes for that student	Votes/Voters
40%	4	4/10
50%	3	3/6
Weak Thought-Leader	**2 Points**	
Minimum percentage of Voters nominating given student	Minimum number of Votes for that student	Votes/Voters
30%	3	3/10
33%	2	2/6
Marginal Thought-Leader	**1 Point**	
None of the above but a minimum of one vote		
Not A Thought-Leader	**0 Points**	
No votes from peers		

4.10.1.5 Student Theoretical Domain Knowledge vs. Thought-Leader Status

This section examines the extent to which student theoretical knowledge of a domain, as opposed to practical knowledge determines the extent to which they will be perceived as a Thought-Leader. Table 4.35 describes the levels of theoretical knowledge and Thought-Leader status. Table 4.36 shows the relationship between theoretical knowledge and Thought-Leader status.

Table 4.35 Legend for Theoretical Domain Knowledge and Thought-Leader status

Value	Theoretical Domain Knowledge	Thought-Leader Status
0	No Prior knowledge	Not Voted for by anyone
1	1 – 4 prior domain courses	Marginal (few votes)
2	5– 8 prior domain courses	Weak (nominated by ~ 30% of voters)
3	9 – 12 prior domain courses	Moderate (~40%)
4	13+ prior domain courses	Strong (50% + Voters)

Table 4.36 Theoretical domain knowledge and Thought-Leader status (means)

Theoretical Domain Knowledge	N	Mean Thought-Leaders Status	Std Deviation
0	31	1.65	1.50
1	42	1.00	1.32
2	9	0.89	1.05
3	7	0.57	0.797
4	47	0.70	1.020
Total	136	1.01	1.271

An Analysis of variance for the effect of prior theoretical domain knowledge on Thought-Leader status was performed. This tested whether there was an effect of a participant's theoretical knowledge on how strongly they are perceived as a thought-leader.

The Analysis showed that those with zero or little theoretical knowledge tend to be more frequently considered as Thought-Leaders than those with strong prior theoretical experience, effect is significant at 5% level, $F(4,135) = 3.03$, $P = 0.02$.

4.10.1.6 Student Professional Domain Experience vs. Thought-Leader Status

This section examines the extent to which student professional experience within a domain, as opposed to theoretical knowledge determines the extent to which they will be perceived as a Thought-Leader. Table 4.37 describes the levels of professional experience and Thought-Leader status. Table 4.38 shows the values for professional experience against Thought-Leader status.

Table 4.37 Legend for Professional Domain Knowledge and Thought-Leader status

Value	Thought-Leaders Status	Professional Domain Experience
0	Not Voted for by anyone	No Prior Professional Experience
1	Marginal (few votes)	Some but < 5 years
2	Weak (nominated by ~ 30% of voters)	$\geq$ 5 years & $\leq$ 10 years
3	Moderate (~40% Voters)	$\geq$ 10 years & $\leq$ 15 years
4	Strong (50% + Voters)	15+ years

Table 4.38 Professional domain knowledge and Thought-Leader status (means)

Professional Domain Experience	N	Mean Thought-Leaders Status	Standard Deviation
0	37	.86	1.21
1	40	1.30	1.446
2	42	0.61	0.99
3	9	1.33	0.87
4	8	2.00	1.69
Total	136	1.01	1.27

An Analysis of variance showed that those with the very highest level of professional experience were more frequently considered as Thought-Leaders than those with less prior professional experience, effect is significant at 5% level $F(4,135) = 3.19$, $p = 0.015$.

4.10.1.7 Student General Domain Experience vs. Thought-Leader Status

No relationship found. It seems that general professional experience (unrelated to the knowledge domain) is not connected with Thought-Leader status.

4.10.1.8 Student Age vs. Thought-Leader Status

No relationship found. It seems that student age is not connected with Thought-Leader status.

4.10.1.9 Student Attitude towards Discussion Board vs. Thought-Leader Status

No relationship found. It seems that initial attitude toward online discussion boards is not connected with Thought-Leader status.

4.10.1.10 Student Prior Online Education Experience vs. Thought-Leader Status

No relationship found. It seems that prior online education experience is not connected with Thought-Leader status.

4.10.1.11 Student posting patterns vs. Thought-Leader Status

This section examines the extent to which student frequency of message posting determines the extent to which they will be perceived as a Thought-Leader. Table 4.39 describes the levels of student posting and Thought-Leader status and table 4.40 indicates the connection between post frequency and Thought-Leader status.

Table 4.39 Legend for posting frequency and Thought-Leader status

Value	Thought-Leaders Status	Message posting frequency relative to average for specific course
0	Not Voted for by anyone	N/A
1	Marginal (few votes)	Low
2	Weak (nominated by ~ 30% of voters)	Average
3	Moderate (~40% voters)	High
4	Strong (50% + voters)	N/A

Table 4.40 Posting frequency and Thought-Leader status (means)

Message posting frequency relative to average for specific course	N	Thought-Leaders Status
1 (Low Post Frequency)	41	0.17
2 (Average Post frequency)	61	1.05
3 (High Post Frequency)	34	1.97
Total	136	1.01

For each individual course, I calculated the average number of student posts to the discussion board. For each student within each course I calculated their post frequency relative to the average the course. This could vary from about 0.1 to 3 times the average. Then I ranked each student within the context of the given course as Low (1 Point -well below average) Average (2 Points) and High (3 points - well above average).

An analysis of Variance showed that there was a strong effect of frequency of posts (relative to course average) on Thought-Leader status. This effect was highly significant $F(2,135) =25.46$, $p= 0.00$ Those posting with greater frequency appear to be more frequently considered as Thought-Leaders than those with average or below average post frequency.

4.10.1.12 Student visiting patterns vs. Thought-Leader Status

For each individual course I calculated the average number of student visits to the discussion board. For each student within each course I calculated their visit frequency relative to the average for the course. This could vary from about 0.1 to 4 times the average. Then I ranked each student within the context of the given course as Low (1 Point -well below average) Average (2 Points) and High (3 points - well above average). Table 4.41 describes the levels visit frequency and Thought-Leader status and table 4.42 shows visit frequency against Thought-Leader status.

Table 4.41 legend for visit frequency and Thought-Leader status

Value	Thought-Leaders Status	Discussion Board Visit frequency relative to average Visit Frequency for specific course
0	Not Voted for by anyone	N/A
1	Marginal (few votes)	Low
2	Weak (nominated by ~ 30% of voters)	Average
3	Moderate (~40% voters)	High
4	Strong (50% + voters)	N/A

Table 4.42 Visit frequency and Thought-Leader status (means)

Visits	N	Mean Thought-Leader status	Standard Deviation
1	39	0.51	0.79
2	60	0.92	1.18
3	37	1.70	1.52
Total	136	1.01	1.27

An analysis of variance showed that there was a strong effect of frequency of visits to the discussion board (relative to course average) on Thought-Leader status. This effect was significant $F(2,135) = 9.77$, $p=0.00$. Those visiting with greater frequency appear to be more frequently considered as Thought-Leaders than those with average or below average post frequency.

4.10.1.13 Will students regarded as a Thought-Leader in one course be regarded as a Thought-Leader in other courses?

This section investigates the extent to which students regarded as Thought-Leaders in one course would also be regarded as Thought-Leaders in a second course. This questions asks if being a Thought-Leader is a kind of transferable property or if there is some kind of underlying latent trait that Thought-Leaders have that allows them to be influential in several different contexts.

Several students (46) took part in more than one online course under study. I wanted to ask will a student who is regarded as a Thought-Leader in one course be regarded as a Thought-Leader in other courses. Thirteen of these students were considered to be Thought-Leaders in one of their courses. Four of these thirteen students (30%) were regarded as Thought-Leaders in both courses. Nine students were regarded as Thought-

Leaders in one course but not in the other. The probability of any student being regarded as Thought-Leader in their course is 28%.

Being regarded as a Thought-Leader in one course does not appear to have a strong effect on whether a person will be regarded as a Thought-Leader in other courses. This would suggest that being regarded as a Thought-Leader may be context dependent, that there may not be a general property of being a Thought-Leader that carries from one setting to another

4.10.1.14 Student Assessment of self as a Thought-Leader vs. Thought-Leader Status

This section examines the extent to which student perception of their status as Thought-Leaders within a discussion board were related to the extent to which they were actually perceived as a Thought-Leader. Table 4.43 describes the levels at which students perceived themselves to be Thought-Leaders and their actual Thought-Leader status and table 4.44 shows the relationship between this self assessment and actual Thought-Leader status.

Table 4.43 Self-assessed Thought-Leaders status and Thought-Leader status

Score	Thought-Leaders Status	*I frequently found myself in a strong leadership role in the online debate*
0	Not Voted for by anyone	Strongly Disagree
1	Marginal (few votes)	Disagree
2	Weak (nominated by ~ 30% of voters)	Undecided
3	Moderate (~40% voters)	Agree
4	Strong (50% + voters)	Strongly Agree

Table 4.44 self-assessed Thought-Leaders status and Thought-Leader status(means)

I was a Thought-Leader	N	Thought-Leader Status	Std. Deviation
0	8	0.25	0.46
1	40	0.80	1.20
2	43	1.00	1.25
3	11	2.00	1.55
4	5	1.80	1.64
Total	107	1.01	1.30

Those who agreed or strongly agreed that they frequently performed leadership roles in the online discussion board were more likely to be Thought-Leaders, this was significant $F(4,106) = 3.26$, $p=0.01$. Students appear to have a fairly accurate view of how important they were in the discussions.

4.10.2 Do Thought-Leaders show increased participation in longer message threads

For course IS-1A student participation in the 14 longest threads (see Table 4.1) was measured. This was compared against whether a student was perceived as a Thought-Leader.

Student Number of top threads active in/Number of top threads (percentage)

S7   =   9/14 (64%)
S20 =   9/14 (64%)
S19 =   9/14 (64%)
S1   =   7/14 (50%)
S2   =   7/14 (50%)
S3   =   6/14 (43%)
S10 =   6/14 (43%)
S13 =   5/14 (36%)
S8   =   4/14 (29%)
S14 =   4/14 (29%)

Of the 7 most frequent participators in the best threads, none of the student recognized strong Thought-Leaders (S14 & S17 – voted for by 100% of voters) showed notable levels of participation appearing in 4/14 and 3/14 of these threads respectively. S7

regarded by students as a weak Thought-Leader did appear in 9/14 threads. S20 a marginal Thought-Leader (1 vote) appeared in 9/14 top threads as did S19 who was not regarded as a Thought-Leader. S1 and S2 both regarded as marginal Thought-Leaders appeared in 7 of the top 14 threads, S3 (not regarded as a Thought-Leader) and S10 appeared in 6 of the top threads

4.10.3 Do Thought-Leaders promote better discussions?

4.10.3.1 Discussion promoting quality.

Having examined the intrinsic quality of student messages and the quality of individual threads the focus will now turn to the extent to which different participants initiate or continue discussion. In a discussion one participant posts a message and others respond to it. If nobody responds it is a poor thread. This section addresses the question of whether Thought-Leaders significantly different from non-Thought-Leaders in the extent to which they can initiate or continue rich discussion.

A number of elements are of interest in assessing how well a person promotes discussion these are:

- Number of Threads started (Thought-Leaders as triggers (Aviv et al. 2003))
- Number of messages in threads started (quality of threads started)
- Number of Participants in threads started (How much student engagement is inspired)
- Number of Branches inspired (how much deep engagement is inspired)
- Number of Messages following post (quality of discussion created by post)
- Number of Segments following post (quality of discussion created by post)

- Waters and Gasson Quality of threads started (Total of Facilitator, Complicator and Closer segments)
- Waters and Gasson Quality segments (Facilitator, Complicator and Closer) following post

Table 4.45 shows which participants started the largest number of discussion threads.

Table 4.45 Most frequent thread starters

Participant	Threads started
S20	6
S12, S24, S7, S9	3
S10, S11, S14, S2,	2
S1, S15, S17, S21, S22, S23	1

S20 (marginal) starts six threads, S17 (Thought-Leader) and S19 (marginal) both start 3 threads as do S12 and S24. S14 (Thought-Leader), S10 (Marginal), S11 and S2 (Marginal) both start two threads each. Table 4.46 indicates which thread starters were most successful in encouraging discussion by drawing other participants into the threads, and by starting longer threads. S20 is by far the most successful thread starter encouraging 43 participations in threads which they started.

Table 4.46 Messages in threads started

Participant	Threads Started	Messages in threads started	Participants in threads started
S20	6	60	43
S12	3	23	16
S14	2	21	15
S7	3	24	14
S9	3	15	13
S24	3	12	11
S2	2	21	10
S10	2	13	10
S11	2	11	10
S15	1	11	9
S21	1	9	6
S17	1	8	5
S1	1	4	4
S22	1	2	2
S23	1	2	2

S20 starts six threads that comprise 60 messages. S7 (Thought-Leader) starts 3 threads that comprise 24 segments; S12 starts 3 threads which have a total of 23 messages. S14 (Thought-Leader) starts only two threads but these have a total of 21 messages, S2 starts 2 that total 19 messages, S9 starts three threads that total 15 messages.

4.10.3.2 Participants in threads started

Threads started by S20 bring in 43 participants almost three times as many as S12 (16). Both S7 and S14 (Thought-Leaders) both drew a large number of participants into the threads they start.

4.10.3.3 Quality of threads started

Table 4.47 describes participants in terms of their ability to start high-quality threads. It shows both how much they participated and the overall quality of threads they started.

Table 4.47 Best thread starters

Participant	Segments posted in threads started	Quality total of segments posted in threads started	Total segments in threads started	Quality segments in threads started	Total Quality of threads started	Threads started	Average quality of threads started
S17	18	68	29	25	100	1	100
S20	63	132	160	73	292	6	49
S14	16	24	52	22	88	2	44
S10	17	28	40	19	76	2	38
S7	17	20	46	24	96	3	32
S15	8	0	34	8	32	1	32
S21	7	16	17	8	32	1	32
S11	15	36	30	13	52	2	26
S9	15	16	39	16	64	3	21
S2	23	16	46	10	40	3	13
S12	17	5	45	14	56	3	19
S24	16	28	34	8	32	3	11
S1	6	0	12	2	8	1	8
S22	5	0	6	0	0	1	0

S17 (strong Thought-Leader) starts one thread but it is the thread with the highest overall Waters and Gasson quality (100), S20 (marginal) starts 6 threads with a total quality of 292 where there are 43 participants, this is an average of 7 participants per thread, the average quality per thread is 49. S14 (strong Thought-Leader) starts two threads with an average quality of 44 per thread. S10 (Marginal) starts 2 threads with an average quality of 38 per thread. S7 (Thought-Leader) starts 3 threads with an average quality of 32 per thread and 3.7 participants per thread. The two strong Thought-Leaders do show an ability to start threads which are considered high-quality under the Waters and Gasson scheme that is consisting of large numbers of Facilitator, Complicator and Closer segments.

4.10.3.4 Quality of segments inspired

A post that leads to a number of direct responses (each response is at the same level) is said to have inspired those responses. The responses were assessed in terms of the quality and number of individual segments. In figure 4.4, message [3] from S14 has inspired two direct responses (message 4 and message 7).

Library Schema -- V1 S14 2/17/08 3:35 PM	**[1]**
RE: Library Schema -- V1 S12 2/17/08 6:38 PM	[2[
RE: Library Schema -- V1 S14 2/17/08 7:41 PM	[3]
RE: Library Schema -- V1 S17 2/17/08 8:04 PM	[4]
RE: Library Schema -- V1 S14 2/17/08 11:29 PM	[5]
RE: Library Schema -- V1 S17 2/18/08 6:25 AM	[6]
RE: Library Schema -- V1 S20 2/18/08 5:17 PM	[7]
RE: Library Schema -- V1 S19 2/19/08 10:37 PM	[8]
RE: Library Schema -- V1 S20 2/20/08 3:42 PM	[9]
RE: Lib Sche -- V1 S10 2/20/08 7:52 PM	[10]
RE: Library Schema -- V1 S1 2/18/08 10:27 PM	[11]
RE: Library Schema -- V1 S22 2/20/08 6:02 PM	[12]

Figure 4.4 Example of a thread outline

Table 4.48 describes participants in terms of their ability to inspire others to contribute high-quality segments. It shows the number of segments inspired, the total quality of segments inspired and the average quality of each segment inspired.

Table 4.48 Ability to inspire quality segments

Participant	Segments inspired	Waters and Gasson Quality segments inspired	Total Waters and Gasson quality inspired	Average Waters and Gasson quality of segments inspired
S17	11	8	32	2.91
S7	29	19	76	2.62
S10	23	12	48	2.09
S9	24	12	48	2.00
S12	28	13	51	1.82
S14	36	16	64	1.78
S20	97	40	160	1.65
S21	10	4	16	1.60
S1	6	2	8	1.33
S15	26	8	32	1.23
S11	15	5	16	1.07
S2	23	6	24	1.04
S24	18	1	4	0.22
S22	1	0	0	0.00

All three of the student recognized Thought-Leaders (S7, S14 and S17) appear within the top six places, S7 and especially S17 are much higher than average in terms of quality of segments inspired. The correlation between average quality of segments posted and Thought-Leader status was a significant 0.56 (df=22,p=0.00), an analysis of variance found Thought-Leader status to be significant $F(3,23) = 4.35$, $p= 0.02$.

4.10.3.5 Branches inspired.

One measure of discussion promoting power is the extent to which a person can inspire others to respond directly to their messages. Only one person can start a thread but numerous people can alter the direction by invoking responses that cause the thread to

deepen. A particularly interesting post will inspire a direct response (reply-to) which causes the thread to branch. The number of branches inspired does not include threads started.

Visual OPAC for children S15 1/24/08 7:54 PM [1]
    RE: Visual OPAC for children S1 1/24/08 8:08 PM [2]
        RE: Visual OPAC for children S19 1/26/08 11:27 PM [3]
    RE: Visual OPAC for children S11 1/25/08 3:20 PM [4]
        RE: Visual OPAC for children S13 1/27/08 10:25 PM [5]
    RE: Visual OPAC for children S10 1/25/08 7:29 PM **[6]**
        RE: Visual OPAC for children S2 1/25/08 7:45 PM [7]
            RE: Visual OPAC for children S10 1/30/08 3:23 PM [8]
        RE: Visual OPAC for children S15 1/26/08 2:32 PM [9]
        RE: Visual OPAC for children S7 1/26/08 4:22 PM [10]
    RE: Visual OPAC for children S5 1/26/08 1:44 PM [11]

Figure 4.5 Example of branching

In the example above, message 6 inspires a branch with three messages (message 7, message 9 and message 10) at the same level, message 7 also inspires a branch (message 8) at a deeper level. So, two things emerge here, how many messages are inspired by a single message and how the discussion deepens

Table 4.49 describes participants in terms of their ability to inspire others to contribute to discussion by causing a thread to depend (branch). The table shows the number of branches inspired, the total number of segments inspired by participant posts, the number of messages inspired by posts, the number of Quality (Facilitator, Complicator and Closer) segments inspired and total quality inspired by that participant (Quality segments x 4) .

Table 4.49 Branch inspiring power of participants

Participant	Branches inspired	Segments after post	Messages after post	Quality segments Following post	Total Waters and Gasson quality Following post
S20	14	96	40	41	164
S7	9	30	17	17	68
S10	7	39	17	14	56
S14	7	25	16	16	64
S2	6	25	11	8	32
S12	6	32	14	14	56
S19	5	7	5	1	4
S1	4	12	7	5	20
S3	3	13	5	8	32
S13	3	8	3	4	16
S16	3	10	3	4	16
S17	3	7	4	1	4
S21	2	16	8	5	20
S6	3	8	4	5	20
S11	2	15	7	3	12
S8	2	4	2	3	12
S9	2	23	10	8	32
S22	1	1	2	0	0
S4	1	1	1	1	4

S20 (Marginal) has inspired more branches than any other poster with a total of 14. S20 has the highest quality rating with respect to the Waters and Gasson scheme. S7 (Thought-Leader) inspired 9 branches, S10 (marginal) inspired 7 as did S14 (Thought-Leader), S2 and S12 (not Thought-Leaders) inspired 6 and 5 respectively, S19 (marginal) inspired 5. S1 (Marginal) inspired 4 as did S3 (not Thought-Leader). S17 (Thought-Leader) inspired 3. Notably Thought-Leaders S7 and S14 inspired the 2nd and 3rd greatest quantity of Facilitator, Complicator and Closer (Quality) segments, this suggests that the ability to inspires others to produce quality contributions is highly valued by participants.

4.10.3.6 Messages following post

Here the differences between S20 and S7 are greater, S20 directly inspires 40 messages in 14 branches (2.86 messages per branch), S7 (Thought-Leader) inspires 17 messages in 9 branches (1.9 messages per branch). S10 inspires 17 messages at 2.43 messages per

branch, S14 (Thought-Leader) inspires 16 messages. Again S14 and S7 (Thought-Leaders) show a high ability to encourage threads to lengthen.

4.10.3.7 Quality segments following post

S20 again inspires the highest amount of quality segments (41) with S7 (Thought-Leader) inspiring 17, S14 (Thought-Leader) inspiring 16 and S10 (marginal) and S12 inspiring 14 each. S2, S9 and S3 each inspire 8 quality segments. S17 inspires just 1 quality segment. Again S14 and S7 (Thought-Leaders) show a high ability to encourage participants to respond with high numbers of Facilitator, Complicator and Closer (Quality) segments, generating the 2nd and 3rd largest number of these segment types.

4.10.3.8 Segments following post

S20 (marginal) still dominates this pattern inspiring 96 segments, S10 (marginal) inspires 39, S12 inspires 32 and S7 (Thought-Leader) inspires 30, followed by S14 (Thought-Leader) and S2 who both inspire 25 segments. S17 (Thought-Leader) inspires 7 segments.

4.10.3.9 Were the most objectively influential participants Thought-Leaders?

Rank	Participant	Score
First	S20	144
Second	S10	134
Third	S14	130
Fourth	S12	125
Fifth	S7	123
Sixth	S2	117
Seventh	S19	109
Eighth	S17	96
Ninth	S1	87
Tenth	S16	86

Leaving aside quality of threads one can use the criteria outlined and explained in section 4.10.5.1 (Threads started, Messages in threads started, Participants in threads started, Branches inspired, Messages following post, and Segments following post) to gather an overall picture of how objectively important a participant was in terms of their ability to start or promote discussion. If the posters are ranked by each of the criteria in section 4.5.10.1 (allowing 24 for 1st place down to 1 for 24th place or zero if no activity in that category) then overall S20 scores 144, S10 scores 134, S14 (Strong Thought-Leader) scores 130, S12 scores 125, S7 (Thought-Leader) scores 123. S2 scores 117. So, the most objectively influential participants are S20 followed by S10 with S14 and S12 in 3rd and 4th places and S7 in 5th. So, two of the student recognized Thought-Leaders (S7 and S14) were very influential but the (by far) most influential poster S20 was only regarded as a Thought-Leader by one respondent. S17 regarded by all respondents as a Thought-Leaders played a relatively modest part in 8th place. It is apparent that objective measures of influence do not always completely influence students' perceptions of others as Thought-Leaders.

5. Chapter 5: Secondary analysis

As described in section 3.8 the analysis took place in two phases. The primary analysis is described in chapter 4 and relates to analysis drive specifically by the original six research questions (Section 3.2). Chapter 5 describes analysis derived from questions raised due to issues uncovered in chapter 4 and from questions that were not initially asked but which emerged as potentially significant.

5.1 What criteria do students use when they identify those as being most important to discussions?

Forty-six students volunteered information as part of the question asking them to list who they felt was most important in the online discussions. While there was a wide variety of responses, there were a number of strong recurring themes.

The strongest single reason mentioned for selecting a key participant was the extent to which that participant could bring in relevant personal experiences to bear on the discussion. This element was mentioned 19 times. A further six mentions referred to "personal insights". Clearly the real world experience of peers as it related to interactions in the discussion board was deemed highly important:

> *many years work experience in public or school libraries, which allowed them to contribute strong real world examples*
>
> *S7 and S17 because they were able to put their experiences into context for the discussion*
>
> *backed it up with strong points gained from the class or previous discussion and personal experience*
>
> *based on the "experiences" they had in the industry.*

S18 had a lot of war stories to share in this subject. It was interesting to read them and compare it to my work. S17 was another example of having good war stories to share. S17 was able to put his discussions as less confusing and say how it is.

I like it when people can extrapolate information from class and explain how it can be used in the real world as opposed to just rewording what is said in the book or from the lecture.

It was clear that S5's comments were tempered with experience.

The next most common theme was a general sense of students posting "quality" contributions. Terms such as "interesting", "thoughtful" and "quality" were mentioned 16 times:

S9 S12/S15/S14/S11/S1 - I really can think of no way to rank these contributors. They are five contributors I found especially interesting to read

S1 and S3 posted thoughtful responses interjecting their own experience and responding to other's posts, not just posting a dissertation as many folks tended to do.

S19, S2, S24. Not just the quantity of their posts, but also the quality

The third strong theme was the importance of a student in starting or prolonging rich discussion. This theme was mentioned nine times:

S5 - also started some good discussions

generated a lot of discussion and started new threads.

S2 started some interesting dialog

S21 was especially controversial at times and thereby stimulated often further discussion.

S19 and S21usually stimulated further conversation

S20
S19
They often kept the conversations going

S12 - seemed to start better discussion threads.

The last strong theme was one of simple activity or volume of posts. Frequency of posting was cited 7 times as an important factor:

S19, S17 and S22 seemed to be very active

There were a few people who were very active—s20, s14, s10

S12, S10 and S20 all being active on the discussion board.

The following were probably the most active:
1. S10
2. S21
3 S3
4. S17

The four strong themes mentioned above dominated the comments made by students about who they felt to be most important. There were other less frequent comments on elements such as "enthusiasm"(3 comments), "domain knowledge" (2 comments), "asking questions" (2 comments), "responsiveness" (2 comments) and being "on-topic" (2 comments).

Overall, the three most important aspects to students appear to revolve around the ability of students to apply personal experiences, to post thoughtful posts and to start or promote rich discussion while raw volume appears to be the 4th most important aspect. This student feedback stressing the importance of personal domain related experience (25 mentions) meshes well with the finding that strong professional domain experience as

assessed by the demographics questionnaire (Questionnaire 1) is highly positively correlated with peer assessment of students as Thought-Leaders. Students with extensive real world experience appear to be bringing that into the discussion forum and enriching the discussion.

5.2 Relationship between domain experience and perceived discussion promoting power

Nine students were specifically named as being important by dint of starting or promoting rich discussion. Analyzing their demographic data from questionnaire 1 it was found that all nine have substantial relevant professional domain experience. The least experienced student reported 4 years of relevant professional domain experience, one student reported 5 years experience, two reported 6 years, one reported 8 years professional domain experience and the remaining 4 all reported over 10 years professional experience (11 years, 12 years, 19 years and 20 years).

5.3 The anomaly of S14, S17 and S20

An interesting finding from the results found in chapter 4 was that although specific demographic details strongly predict the extent to which students may be regarded as Thought-Leaders there is what appears on the surface to be anomaly for course IS-A.

In this course there were two strongly recognized Thought-Leaders S14 and S17. In addition there was S20 who objectively contributed a great deal to the discussion board and who contributed high-quality messages (according to both Waters and Gasson and Anderson and Krathwohl schemes) but who was not regarded as a Thought-Leader by peers. I decided to investigate this matter further by looking in detail at each of the participants backgrounds and in detail at all of their messages posted to the discussion board. Some interesting findings emerged from this secondary analysis.

5.3.1 Participant backgrounds

Both S14 and S17 have extensive, 18 years and 7 years respectively industry experience in the knowledge domain (IT). S20 by contrast has no practical domain experience and little work experience 3 years compared to 30 years for S14 and 9 years for S17

5.3.2 Attitude

Both S14 and S17 expressed strong satisfaction with the course and the discussion board both publicly and privately. Neither S14 nor S17 privately felt they were influential in the discussion board. S20 was weakly satisfied with the course, felt that they had been influential in the discussion board but was also moderately negative about elements of the course and how the course was run. S20 expressed most interest (several times) in how easy the online elements would make the course and how the course they enjoyed most

was the easiest due to their prior background. S20 also publicly expressed hope that the course would be easy. Both S14 and S17 knew what they expected to get from the course and were (overall) happy with the result. S20 had to refer to the course description to express what they hoped to get from the course and was only moderately happy. This suggests that S20 viewed the course as a contractual requirement rather than something to be excited about.

5.3.2.1 Examples from S20

From reading the course information, I'll be looking to get a solid technological foundation from this class.

My family is moving this quarter, maybe even back to the States, so hopefully the work won't be too much to handle!

"it better fits my current lifestyle. It's very straightforward and doesn't waste my time".

"favorite online course has been statistics because it was very straightforward without any extraneous assignments and my extensive statistical experience made the work very easy"

Almost every week I wished that the class was more library or non-profit centered, as I probably would have gotten more out of the class with this sort of focus. With the potential to be an owner and definitely a user of a library information system, I am concerned that the information I received in this class will not sustain itself in a translate-able way in my brain by the time I graduate. If it had been more library-centric from the beginning, the information would probably have more "staying power."

5.3.2.2 Examples from S14

I'm hoping this course will help me build my computer systems knowledge so that I can go into either digital librarianship or work in a network news video library.

I wish I'd had this course over 20 years ago……This course thought me not only the processes to go through in designing systems, but the rationale behind it all. It forces you to think -- and analyze -- and assimilate new concepts.

Like most everyone else, I really enjoyed the Blackboard discussions.   Overall, a very worthwhile -- and, yes, difficult at times -- course, presented well.

5.3.2.3 Examples from S17

This is my first Course and also, my first Quarter in the iSchool and I am excited to be a part of this community. I hope to get a solid foundation in System Analysis by the end of the course.

I will say that I have enjoyed every bit of the course. Initially, I was concerned that I will not benefit from the practical (hands-on) aspect of the course but I was wrong. Working on the ERDs, context DFDs, Decomposition Diagrams etc were more than enough.

I also enjoyed the discussion aspect of the course especially when I receive feedback from my posts that made me want to re-think what I wrote and also when I read other posts and got different aspects of the answer. That is really a great aspect of the course.

5.3.3 Characteristics of messages posted

5.3.3.1 Length of messages

Both S14 and S17 post messages that are substantially longer than S20. S14's messages are on average 130 words long, S17's are 185 words long and S14's are 236 words long.

5.3.3.2 Calls to authority

Both S14 and S17 make substantially more calls to authority. S14 invokes external authority 48 times, S17 does so 46 times but S20 only does so 28 times. Also both S14 and S17 draw on a wider range of external resources. S14 draws on 13 different credible external resources, S17 draws on 12 different resources but S20 only draws on 5 different sources (including the course text book).

5.3.3.3 Use of relevant Anecdotes

Both S14 and S17 frequently back up their points with anecdotes related to professional

work experience, S14 does this 10 times, S17 does this 9 times but S20 only invokes

personal work experience twice and shows examples which are more abstract and less

focused on the discussion at hand.

5.3.3.3.1 Examples from S14

*In the news department where I worked, I started computerization in 1989 with a small
mainframe and 20 dumb terminals. The system went through three upgrades of hardware
and software in 15 years. The changes made for better processes in getting the work
done, but the system users were always   upset because they had to learn new ways to do
things. The "new ways" eventually made sense to the system users, but for awhile the
system owners and system builders got a lot of flak. That is one of the things you may not
see in a textbook.*
----
*The decision to say "OK, that's enough testing, let's do this," is not always done by the
person who should be controlling the project. In my case, I was working in the news
department of a TV station that was one of a group of nine stations. The upper
management arbitrarily imposed a new computer system on four stations, including mine.*

*It was a trainwreck of a system. It didn't do anywhere near what it claimed it was
capable of doing. Three of the stations accepted it and put it in service without any
delay, and experienced nightmare after nightmare. The systems managers and their local
managers didn't have the guts to say, "This system is awful.*

*The vendor needs to get a lot of bugs out of the system." They had to deal with constant
problems and system crashes on a daily basis.*

*In my situation, the local management listened to my explanations that, until the new
system underwent huge debugging, our old system was better. My managers agreed, and
I spent six full months going back and forth with the programmers until they got it right
and we put the system on line.*
*The people who sold us the new system lost about $6000 in licensing fees because our
station didn't use it for 6 months. They probably paid several times that in wages to the
freelance programmers they had to pay to correct the problems. Pre-release testing is
definitely a good thing*

5.3.3.3.2 Examples from S17

my department (Information Management) uses a method called "Kaizen", which is sometimes referred to as the "Continuous incremental improvements" to help improve efficiency and eliminate waste.

For instance, if I am searching for a particular book which is not in my branch but in the branch elsewhere and I find out that the other branch is willing to loan it to me, I can just drive there to pick it up if I need the book urgently.

5.3.3.3.3 Examples from S20

Your example reminds me of a company I worked for in Virginia. I now understand that the company is in desperate need of a systems analyst, due to how redundant many of the tasks seemed and the many "turf wars" that were constantly being fought. Add to it an outdated computer system, and the whole thing was a muddled mess.

At libraries I've used, they do something like that with the call numbers for multiple copies. They'd have the call number... 687.43... and then put the copy number after it.... 687.43 001... for a unique call number

5.3.3.4 Inaccurate Statements

Both S14 and S17 are factually accurate in their posts when they make definitive statements. S20 however does make some (7) slightly inaccurate statements these indicate slight misunderstandings about the nature of database keys (the definition of primary keys and how a primary key cannot be null), the difference between systems development and systems analysis, the difference between approaches, methods and tools and the nature of inter-process communications.

5.3.3.5 Correcting inaccurate statements

Both S14 and S17 (tactfully) correct inaccuracies. Both do so 11 times, by contrast S20

explicitly corrects any mistakes from peers only once.

5.3.3.5.1 Examples from S14

*The only thing that caught my eye was that all the lines are dotted, indicating
nonidentifying relationships, some of them would be unbroken lines* (Some ERD
relationships must be identifying).

The Book and CD entities are both titled the same. (entities must have unique names*)*

the focus is on the data, and that "people" relationship shouldn't be there. (DB designs
do not include humans)

there's a need for some sort of loan documentation -- a transaction record of some kind.
(A library system must record loans of items)

5.3.3.5.2 Examples from S17

*Referential integrity ensures that values in a particular table (foreign key values) are
consistent across tables. In relational databases, data is stored in one table only). So
there has to be a way to ensure that data (Customer Number) is intergretated (consistent)
across all tables. One of the ways to do that is to use contraints (limitations or controls)
to ensure that the same data (customer number) is the same value across tables* So any
table that has a foreign key should have refencial integrity.

in a library setting people will want to know the process of borrowing and returning
borrowed items

5.3.3.5.3 Examples from S20

It's a concatenated key - a group of attributes that identifies an entity. *Both of these keys
are needed to identify one loan transaction. Without the call number, we wouldn't know
which material the member checked out*

5.3.3.6 Complicator (speculative posts)

S20 posts a very large number of "Complicator" segments (19). By contrast S14 posts 2

and S17 posts 6. S20'S Complicator segments are sometimes somewhat more speculative

("what if") than developments or refinements of ideas.

5.3.3.6.1 Examples from S20

Just a thought... Instead of using call numbers, could the system implement barcodes instead? If I were to develop a system where each item had to have an identification number, I would assign them each a barcode, that way if there were multiple copies with the same ISBN, or the same call number the barcode could serve as an individualized primary key.

I think it's not as big of an issue in a non-profit situation as it is in the business world because we're not trying to make money from the system, and we can get money from outside sources, if that makes sense

For example, in some organizations, top management doesn't care for underlings who don't follow chain of command in order to make much needed comments

From chapter 4 it was seen that these Complicator segments had relatively weak power to

inspire responses, no message that consists solely of Complicator segments inspires a

single response and even in combination with other segments the power to inspire

responses is weak.

5.3.3.7 Diffidence vs. confidence the language of posts

I examined the way in which posts were phrased. I searched for words and phrases which

expressed certainty or confidence (Will be, is, certainly, certain, true, has to, fact, reality)

and words which expressed diffidence or uncertainty (assume, probably, possibly,

Maybe, may, I bet, I guess, I thought, I had thought, I think, I imagine, wonder).

Scoring positive assertions as +1 and diffident assertions as -1 Table 5.1 shows the relative levels of confidence or diffidence for the three participants.

Table 5.1 Comparison of confidence and diffidence for S14, S17 and S20

	S14	S17	S20
Messages	64	91	85
Diffidence Score	-106	-261	-223
Confidence Score	85	200	57
Overall	-21	-61	-166

While both S14 and S17 show a slight tendency towards cautiously worded posts they also show a great deal of posts that express certainty. S20 by contrast posts messages that have a very high degree of diffidence. Uncertain or diffident phrases appear almost 4 times as often as phrases expressing certainty or confidence in S20's messages.

5.3.3.7.1 Diffidence vs. confidence the language of posts Examples from S20

I wonder what kind of confidentiality policies would need to be considered in a parent/teacher communication system?

I guess a lot of the interaction employees have with the database are because of interaction with the patrons.

I thought I'd throw it out there and see what you all thought

It seems rather cumbersome, doesn't it?

Do you think that extreme programming would be a possible alternative?

5.3.4 Summary

The overall picture is that both S14 and S17 who were perceived by peers as strong Thought-Leaders post with a far greater degree of authority and certainty. Both S14 and S17's posts are frequently backed up by calls to relevant personal experience or a diverse range of definitive authorities such as the text book and journal papers. Also S14 and S17 make few factually inaccurate statements and often intervene to correct inaccurate assertions (in a supportive manner) which S20 does not do. Both S14 and S17 show a high degree of confidence in their answers backed up by years of domain experience.

Heckman suggest that online leaders may fit into two categories. One category is a definitive slightly didactic leader the other is a supportive conciliatory leader. The evidence from this analysis suggests that both S14 and S17 perform a figure of authority type leadership role.

5.4 Knowledge domain differences in Thought-Leader experience levels.

In seven of the courses under study there are distinct student nominated strong Thought-Leaders, four courses are IS and three are LIS. It was seen in Chapter 4 that those with the highest levels of relevant professional experience were more likely to be regarded as Thought-Leaders and that student professional domain experience appeared to be highly valued and was frequently cited as a reason for nomination as a Thought-Leader. However, there may be domain-related differences in the backgrounds of the Thought-Leaders.

Analyzing the demographic data for strong Thought-Leaders did reveal a difference between the backgrounds of strong Thought-Leaders in IS and LIS domains. For strong Thought-Leaders in the IS domain the average professional domain experience is 8.3 years (n=9) for strong Thought-Leaders in the LIS domain the average professional domain experience is 1.3 years (n= 7). A t-test was performed between the two groups (IS domain strong Thought-Leaders and LIS domain strong Thought-Leaders) using years of professional domain experience as the test variable. This result shows a significant $F(1,16) = 6.037$, $p = 0.028$) difference between the two groups. In fact the average professional domain experience for LIS course students was 3.6 years, so the LIS domain strong Thought-Leaders were relatively inexperienced even compared to their peers.

5.5 The impact of instructor intervention on discussion boards ?

Since there were two sections of course IS-1 working to the same syllabus and hosted by instructors with very different interaction strategies, which could accurately be described as polar opposites it seemed like a good opportunity to investigate in an (very) exploratory and somewhat speculative manner the impact of the differences in instructor approach. The instructors for both sections were experienced instructors who were former industry professionals of similar ages, backgrounds and experiences.

The instructor for section IS-1A took a minimalist approach to intervention and in the 10 weeks posted 32 messages (2.25% of the total messages) of which half were in a "Ask the professor" help forum but typically did not intervene in the question-based discussions, nor did this professor take part in the week 1 introductions. This professor had little "social" contact with the students, did not project their personality into discussions and was highly task-focused.

The instructor for section IS-1B by contrast was very hands-on and posted 735 messages representing 25% of all messages in the discussion board. This professor was highly interactive being active in all question-based discussions and very "social" in the student week 1 introductions where they posted much revealing information about their hobbies and interests including weather, music, Disneyworld, cooking, children, Dickens, vintage cars, pets, gardening, insects, Star Wars, birds, Nintendo, Scrabble, foreign films, beer and so on. This "social" aspect did not extend into their formal discussion participation which was very much on-topic.

This analysis will start by looking at the total level of activity in the discussion boards for both sections:

Table 5.2 Basic statistics for discussion board participation for section IS-1A

Students	Discussion Board Visits	Posts	Topic Threads	Posts/ Thread
23	24095	2745	67	40.9
Student Posts	Student Posts/ Thread	Formal Questions	Student Posts/ Question	Average Thread Depth per question
1648	24.7	30	67	8.6

Table 5.3 Basic statistics for discussion board participation for section IS-1B

Students	Discussion Board Visits	Posts	Topic Threads	Posts/ Thread
24	13079	1458	352	4
Student Posts	Student Posts/ Thread	Formal Questions	Student Posts/ Question	Average Thread Depth per question
1334	3.79	14	95.3	5

The above two tables seem to suggest that there is significantly more overall activity in the section hosted by the more interactive professor, though each formal question gets more attention in section IS-1A. To investigate this further I chose six discussion board questions that were the same in both sections and analyzed the activity for these.

Table 5.4 Comparison of messages posted for sections IS-IA and IS-1B

Question	IS-1B (intervention)	IS-1A (no intervention)
Systems Analyst as problem solver	69	74
Agile methods	96	97
Project design	150	97
Requirements Analysis	96	83
Fact Finding	85	90
Data Modeling Practice	182	180
Average	112	103

Table 5.4 does not seem to show much difference in activity between the two sections.

To dig a bit deeper I chose 3 of the questions at random to look at in more detail. Table

5.5 illustrates the number and types of messages posted by students in the two sections.

Table 5.5 Message type comparison for sections IS-1A and IS-1B

Agile methods	IS-1B (intervention)	IS-1A (no intervention)
Total Messages	96	97
Instructor – student messages	16(17%)	0
Student messages	80	97
Student-instructor messages	52	24
Student-student messages	28	**73**
Systems Analyst as Problem solver	**IS-1B (intervention)**	**IS-1A (no intervention)**
Total Messages	69	74
Instructor – student messages	17(24%)	0
Student messages	52	74
Student-instructor messages	25	25
Student-student messages	27	**52**
Project design	**IS-1B (intervention)**	**IS-1A (no intervention)**
Total Messages	150	97
Instructor – student messages	44(30%)	0
Student messages	106	97
Student-instructor messages	53	23
Student-student messages	53	**74**

The table above shows that for each question students in section IS-1B spent less effort

communicating with their peers and more communicating directly with the instructor, this

was true even for the "Project design" question where there were 50% more messages for

section IS-1B. It seems that in this case extensive instructor interaction detracts from peer

to peer interaction. Finally, I examined the individual messages posted by students for

each of these questions. As a crude first step measure I took the length of each message

as a proxy for the quality of the message. Table 5.6 shows the length of messages for the

same questions discussion in the two sections.

Table 5.6 The effect of intervention of message length

	IS-1B (intervention)	IS-1A (no intervention)
Agile methods (Words)	8823	21203
Agile methods (Messages)	80	97
SA problem solver (Words)	5220	15714
SA problem solver (messages)	52	74
Project design (Words)	12227	20211
Project Design (Messages)	106	97
Tot messages	238	268
Tot words	26270	57128
Average words/student message	110.38	213.16

The table above shows that messages posted by students in the "no intervention" condition were consistently significantly longer (almost twice as long) than messages posted by students where there was significant instructor intervention.

The different approaches however did not seem to alter student perceptions of their sections. There was no significant difference between student overall satisfaction, perceived value, understanding or level to which expectations were perceived to have been met in the different sections as reported in questionnaire 2. Student grades for both overall scores and for discussion board participation were comparable for the two courses. Two anecdotal differences did emerge, students in section IS-1B showed more open satisfaction with the course (and with the instructor) in the week 10 wrap-up, but students in section IS-1A were more openly positive about the contributions made by their peers.

6. Chapter 6: Discussion

6.1 Primary analysis

This section will discuss the implications of the results derived from the primary analysis which was explicitly driven by the original 6 research questions (See section 3.2). These analyses focused on both content analysis and analysis of student questionnaire data.

One strong overarching theme is that role-behaviors are important. To start with, student facilitation does appear to work well. Facilitator role-behaviors were strongly positively connected with both longer discussion threads (more messages) and also with threads that generated a greater number of ideas (segments). This appears to be an important finding, it suggests that the Waters and Gasson characterization of facilitator role-behaviors matches with observed behaviors. Similarly, these Facilitator role-behaviors were the most powerful in terms of causing threads to deepen. Such role-behaviors much more frequently caused threads to branch, indicating that students were responding to the message and being drawn into richer discussion. Again this seems an important finding as it suggests that these role-behaviors are powerful in terms of promoting high-quality discussion. It suggests that Waters and Gasson's positioning of Thought-Leaders as strong peer Facilitators has some validity. Similarly, the Complicator role-behavior also showed strong idea (segment) generating power. Since this is also crucial to Waters and Gasson's characterization of Thought-Leaders, this seems to be an important result. Perhaps more importantly these results suggests that rich discussion can be achieved when driven entirely by student contributions with no instructor input after the initial problem framing. It seems in this case that direct instructor involvement in discussions may not be essential to the extent to which student can engage in healthy discussion and

may in fact sometimes be counterproductive by moving the focus from peer to peer discussion to an imperative to communicate directly with the instructor. This is an interesting result as the value of skilled discussion moderations is so frequently cited.

The relative weakness of the Closer role-behavior raises an interesting question about the characterization of Closer as a high-quality role-behavior. These role-behaviors which indicate an attempt to draw together different perspectives into coherent answers did not show great power to lengthen discussion compared to facilitator segments, however neither did they wholly close discussions as might be expected from their name. It seems that closers may not wholly close but neither do they encourage further discussion. It would appear necessary to reevaluate the impact of these role-behaviors.

The results show that participants characterized as frequently exhibiting high-quality role-behaviors (Facilitator, Complicator and Closer) are in fact highly influential participants. Similarly, 7/10 of the most objectively influential participants (threads started, branches inspired, messages, inspired, and number of ideas inspired) are also ranked in the top 10 for the Waters and Gasson scheme and that the correlation between objective discussion promoting quality and Waters and Gasson quality is 0.65. This indicates that quality as measured by the Waters and Gasson scheme shows a high degree of concordance with objective measures of participant influence. This suggests that higher quality role-behaviors may be useful as predictors of discussion quality.

A second key theme is that Social Engagement is important. The participants who are the most strongly socially engaged are also the participants who most consistently generate

deepening discussion and who are most effective at drawing others into discussion. It seems that this kind of engagement is infectious; it may bring in contributions from others and generates deep debate. There is also a strong correspondence between the level of social engagement in a thread and the presence of participants who are regarded as being of high-quality according to the Waters and Gasson scheme. These high-quality role-behaviors (Facilitator, Complicator and Closer) appear to presage deep, rich discussions with high levels of participation from students, this again shows some possible validity for these participants to be regarded as Thought-Leaders.

There is clearly a strong relationship between role-behaviors and learning outcomes in this study. The correlation between measures of quality as assessed by the Waters and Gasson scheme (Facilitator, Complicator and Closer) and the cognitive outcomes from the Anderson and Krathwohl scheme is a powerful 0.9. As students post greater numbers of these role-behaviors there is also a strong increase in the number of Analyze, Evaluate and Create segments (the most important cognitive contributions according to the Anderson and Krathwohl scheme). This suggests that these role-behaviors might indicate quality outcomes and also that the Waters and Gasson scheme may be potentially useful as a proxy for discussion quality measures.

The belief that there are a small number of identifiable Thought-Leaders present in the discussions appears to be important. Students consistently reported greater satisfaction with the course and the discussion board when there were 2 or 3 Thought-Leaders reported. The effect was notably higher when there were two strong Thought-Leaders

present. It seems that the sense that there are a few strong core participants may be important, possibly this sense of a strong leadership brings a sense of security that there is experience and expertise they can draw upon.

The last of the original six research questions asked if there were any common factors that identified student recognized Thought-Leaders. There were a number of interesting results for this question.

Extensive theoretical knowledge of a domain was not connected to Thought-Leader status. Those participants with zero or little theoretical knowledge tend to be more frequently considered as Thought-Leaders than those with strong prior theoretical experience. This suggests that purely academic knowledge of a domain is not held in great esteem or possibly that what has be learned in an academic setting but not backed up by practical experience is less valued than real world expertise.

On the other hand, prior professional domain experience was positively associated with Thought-Leader status, those with the greatest level of professional domain experience scored more highly on Thought-Leader status. It seems that it is important that Thought-Leaders can leverage professional experience into stories and examples that back up a point or that demonstrate the pragmatic importance issues raised in the discussions.

Thought-Leaders, overall, tended to post messages with rather more than average frequency. This is confirmed in the secondary analysis where students cited post

frequency as important in judging Thought-Leaders. That student perceptions are swayed by post frequency is perhaps not surprising.

By and large Thought-Leaders did show a common ability to promote better discussions. Both of the strong Thought-Leaders (S14 and S17) from course IS-1A were in the top 3 slots for overall quality (participants, messages, depth) of threads started. S17 started an especially rich thread. It seems that being considered a Thought-Leader correlates with the ability of a participant to start or promote good discussions. Thought-Leaders showed a strong ability to draw participants into a discussion, to inspire good quality (Facilitator, Complicator and Closer) responses, to inspire threads to deepen and to inspire high-quality cognitive outcomes. By these measures the Thought-Leaders would seem to live up to their title. These Thought-Leaders seem to be fulfilling a strong trigger role by drawing participation from others. This last finding suggests that the Waters and Gasson scheme may be a useful scheme for gauging influence in a discussion by dint of assessing the inspirational quality of participants. It also suggests that the power of Thought-Leaders lies not just in what they can contribute directly but what they can elicit from others.

6.1.1 A surprising result

The Vicarious-Acknowledger role-behavior was not initially regarded as a particularly high-quality one, representing responses that praised a contribution as helping their understanding. Nevertheless, this role-behavior did work to lengthen threads; students did frequently feel moved to respond to this praise. This finding suggests that when using thread length or depth as quality measures it is necessary to carefully differentiate between active content and either back-patting feedback or thank you messages.

6.2 Secondary analysis

This section covers questions that were raised by the primary analysis and was inspired by a desire to dig deeper into some important issues. The analysis here is more predominantly qualitative in nature than Section 6.1 and some of the findings are necessarily more speculative.

6.2.1 What did peers say about Thought-Leaders?

A broad demographic picture of the characteristics of student assessed Thought-Leaders emerged in Section 4.10; however more insights may be gained by seeing exactly what students said about those they nominate as Thought-Leaders. A total of 46 students volunteered opinions about why they considered and a number of interesting themes emerged.

The single most frequently mentioned characteristic for Thought-Leaders was the extent to which they could bring in relevant personal experience into the discussion. Where participants had extensive practical domain experience and could illustrate points with real world examples their contributions were far more highly valued. It seems as if the "war stories", as several instructors referred to them, held great power for the discussion board participants. These stories went beyond "at my company we…" contributions to allow a framing of an issue in real world terms and with real experiences instead of book examples. The peer-nominated Thought-Leaders did use these stories more frequently than non-Thought-Leaders. A particularly response inspiring example from one of IS-1A'a Thought-Leaders is shown below

The decision to say "OK, that's enough testing, let's do this," is not always done by the person who should be controlling the project... I was working in the news department of a TV station that was one of a group of nine stations. The upper management arbitrarily imposed a new computer system on four stations, including mine.

Three of the stations accepted it and put it in service without any delay, and experienced nightmare after nightmare. The systems managers and their local managers didn't have the guts to say, "This system is awful. The vendor needs to get a lot of bugs out of the system."

In my situation, the local management listened to my explanations that, until the new system underwent huge debugging, our old system was better. My managers agreed, and I spent six full months going back and forth with the programmers until they got it right and we put the system on line.

Pre-release testing is definitely a good thing

The 2nd strong theme mentioned was general quality in the Thought-Leaders' posts. The terms used such as thoughtful and interesting point to a general sense that these Thought-Leaders were posting good contributions, though there is no detailed feedback here so it is not possible to say whether they prized the Facilitator, Complicator or Closer contributions mentioned earlier.

The third theme was that respondents perceived Thought-Leaders as capable of starting and promoting rich discussions. This finding concords well with the earlier finding that Thought-Leaders did indeed exhibit greater objective influence in terms of promoting rich, deep discussion. It appears that students can recognize the influence of Thought-Leaders as discussion promoters.

6.2.2 Domain experience and discussion promoting power

All the students who were specifically named as being important due to their ability to start or promote rich discussion were found to have extensive relevant professional domain experience. This once again suggests that domain experience is important for Thought-Leaders even if it is not specifically cited by respondents.

6.2.3 The Anomaly of S20

Possibly the most interesting finding in Chapter 5 was the apparent anomaly between S20 (non-Thought-Leader) and Thought-Leaders (S14 and S17). S20 apparently contributed much more objectively than S14 in terms of threads started, messages posted and branches inspired. S20 also posted some very high-quality posts as judged both by cognitive outcomes and the quality (Facilitator, Complicator and Closer) role-behaviors. Despite this S20 was not regarded as a Thought-Leader.

There were several elements in which S14 and S17 differed from S20. The overarching theme, however, seems to be a difference in authority. Both S14 and S17 seemed to speak with greater authority. This authority was manifested in the way which they could back up their points with relevant anecdotes and with calls to external authorities (Books and Journals) and correct the mistakes of others. They even differed in the language they used, S20 was both more diffident and more speculative while S14 and S17 used very positive language. This greater projection of authority seems to have impacted on their being perceived (or not) as Thought-Leaders. As before, the role of stories in the Thought-Leaders repertoire emerges as a potentially important theme.

6.2.4 Section 5.4 Knowledge domain differences

On a somewhat more speculative note there appeared to be some differences between the extents to which professional domain experience is important for Thought-Leaders in different knowledge domains. For LIS students, professional library experience was not correlated with being chosen as Thought-Leaders. Since both the LIS and IS courses were designed to prepare students to be professionals in these fields, it is surprising that prior expertise does not seem to be valued. Possibly the LIS domain courses demonstrate a mismatch to some degree with the experience of existing professionals.

6.2.5 Moderator strategies

We saw in Section 5.5 a rather extreme example of differences in moderator strategies between IS-1A and IS-1B, two sections of the same course offered at the same time. In this case study there is the suggestion that instructor moderation is counter-productive to collaborative learning in that it moves the focus of discussion from peers to the need to respond directly to the instructor. One should be cautious about making such a conclusion. These examples were not only polar opposites but both were atypically extreme, the instructor for IS-1A posted 2% of the discussion board posts and the instructor for IS-1B posted 27%, the average for instructors across the 10 courses was 13%, so both IS-1A and IS-1B are outliers. However, it does seem that rich discussion may be affected by purely peer-to-peer messages as well as by instructor-moderated discussions.

6.2.6 The nature of Thought-Leaders

In some respects the role of Thought-Leader in an online discussion is difficult to conceptualize. In most research settings an online group has a specific tack with a definable solid outcome, a solid product such as a report, a critique or some sort of consensus. In the online learning setting described here the process is the outcome. The expectations are that the group will explore a topic and critically evaluate a set of questions. This expectation can be illustrated from three instructors' guidance on discussion board participation.

> *You must demonstrate the knowledge you have gained about this important material and your ability discuss it at a graduate level. Simply stating your opinion is not sufficient. You need to use the text and other sources to provide authoritative insights into these important discussion questions. When replying to another student's post, use comparison, analysis and aspects of critical thinking* (Instructor IS-1B*)*

> *Note that it is quality that counts. Within certain broad boundaries, the quantity or volume of your submissions will not help your grade. In fact, I most value submissions in which you state your position clearly and concisely. On the other hand, evidence that you are "engaged" in discussions with your classmates and myself will help your grade.*
> (Instructor IS-1A)

> *Your participation grade is based on (i) the preparation through course reading and research on the topic that is reflected in your contributions to class debate, (ii) the insights that your contributions add to the class understanding of the topic under debate, and (iii) your participation in class discussions. Take your time and make your responses well thought-out, reflecting your growing understanding of the issues being discussed. .*
> (Instructor IS-2)

This framing of the discussion would seem to operate against leadership in such a joint venture, yet strong Thought-Leaders did frequently emerge. There were never more than three strong Thought-Leaders in any course.

These leaders were considered Thus, due to how they impacted on the group's consciousness. For some raw activity was important for others it was some fluid sense of quality of contributions.

For many, however, Thought-Leaders had one of two key characteristics, they were perceived as having the ability to promote rich discussion or they could relate course material to relevant real world experience providing a concrete grounding for discussion. It seems importantly that participants who were perceived as having strong discussion promoting powers also universally turned out to have extensive practical domain experience.

As seen in the course under close scrutiny the Thought-Leaders really did have strong discussion promoting powers, they started or encouraged rich discussions ripe with critical thinking and hypothesis creation and they inspired high-quality contributions from other class members.

The results also suggest that some of the Waters and Gasson behaviors closely tie in with Thought-Leader behaviors. Segments that can be characterized as "facilitator" types show the greatest power in inspiring discussion to deepen by encouraging threads to branch into further discussion as opposed to moving on a flat structure where each person responds individually with little reference to peers' posts. It appears that "Complicator" type segments may inhibit further discussion, where a post consists entirely of "Complicator segments it does not inspire any further discussion and even in combination with other segment types has a very low inspirational quality. There were a total of 62 Complicator segments, when combined with other types they inspired 13 branches by contrast peer-knowledge elicitor segments were almost half as frequent (36) yet inspired

13 branches in combination with other segment types. Notably S20 from course IS-1A who one would imagine might be regarded as a strong Thought-Leader by dint of decent quality posts in fact posts a vast number of Complicator posts, possibly this partially inhibits them from being regarded as a clear Thought-Leader.

We have also seen that extensive experience prior to a course may not always be an important factor, even if the ability to draw on relevant professional experience is the single most frequently mentioned characteristic for Thought-Leaders this seems to be of most importance for IS domain courses and not for LIS domain courses, the crossover course (IS/LIS) did not have any strong Thought-Leaders. This suggest that perception of students as Thought-Leaders is highly situated, that the context is important for determining what kinds of contributions and backgrounds will be deemed most valuable.

6.3 Primary analysis and secondary analysis

By performing two sets of analyses on the data it is possible to see different types of patterns. The primary analysis provides a broad view of trends and themes on an aggregate level where certain characteristics are most likely to have certain effects, such as, the effect of facilitator segments on threads. The secondary analysis gives us a deeper insight into certain issues, such as why S20 was not regarded as a Thought-Leader or how important domain experience is. This secondary analysis reminds us that the results may be highly situated, that while broad patterns emerge from the large scale analysis, more specific insights can be found by examining local variations. Without the secondary, largely qualitative analysis the importance of "war stories" for influencing discussion would not have emerged. Similarly, the finding that different domains bring with them

different leadership requirements would not have emerged. On the other hand, concentrating solely on the secondary analysis would have missed important patterns such as the concordance between the socio-cognitive role-behavior scheme and the purely cognitive Anderson and Krathwohl cognitive dimension. This later finding is a potentially interesting one. Thus, a mixed model of analysis seems like an appropriate approach for future online learning research.

7. Chapter 7: Research contribution and conclusion

This research was intended to fill some critical gaps in our state of knowledge with regard to student behavior in online learning environments. It appears that the idea of emergent online leaders (Heckman and Misiolek 2005) is supported, that patterns of both objective and perceived influence suggest that some students adopt roles of greater importance in online discussions. It appears that there is not an amorphous pattern of contributions but that some students exert more influence than others. Similarly, student objective influence according to measures of participation and inspirational behavior is not always correlated with perception of students as Thought-Leaders. Students can be highly influential in promoting discussion yet may appear to be relatively unimportant this may be due to the manner in which they present their ideas.

The Waters and Gasson role-behaviors scheme seems to be a potentially useful analytic tool. Not only is there a high level of concordance between different role-behaviors and the promotion of in-depth persistent discussion but also a strong connection between role-behaviors and the cognitive components of learning outcomes as characterized by the Anderson and Krathwohl scheme.

Similarly, the extension of Kappelman and McLean's model of engagement incorporating the notion of sustained iterative social engagement seems to be a useful analytic tool. There is a strong concordance between measures of engagement and discussion promotion quality, students showing high levels of social engagement objectively also contributed more to discussions and that threads which showed greater

social engagement also tended to show higher overall levels of participation. Social engagement was also notably highly correlated with student satisfaction. Thus, encouraging greater social, engagement may lead to greater overall perceived satisfaction. This also suggests that the notion of iterative learning loops may be highly important for student satisfaction. This engagement seems to be important for discussion.

The research also shows that the presence of Thought-Leaders may have a strong impact on student satisfaction; this is especially true where there are 2 or at most 3 perceived Thought-Leaders. Where students feel that influence was more broadly spread they demonstrated lower levels of satisfaction. Students, it appears, like to think that there are a few strong figures in their cohort. Certainly the presence of a few highly experienced professionals had a strong effect on perceived satisfaction in the courses examined. This may have some important implications. One possible ramification is that when offering multiple sections of the same course simultaneously it may be advisable (where possible) to split sections so that each has a few potential Thought-Leaders to provide some guidance but not have too many. But, of course predicting who may perform Thought-Leader roles is not trivial.

The research also implied a further important conclusion that Thought-Leader status may be highly situated that a person who is regarded as a Thought-Leader in one setting is not necessarily going to be regarded as a Thought-Leader in another setting. In the courses analyzed several students appeared in two courses at the same time. It was extremely rare for a student who was regarded as a Thought-Leader in one course to be also regarded as

a Thought-Leader in their second course. This suggests that there is not a Thought-Leader type of personality. Moreover, the value of a students background was different between IS and LIS domain courses.

Touching the above student professional background is highly influential in determining the extent to which a student will be regarded as a Thought-Leader, this influence seems to be important whether or not a student explicitly reveals the depth of their professional experience, in the case of IS-1A S14 does so explicitly in their public introduction but S17 does not, yet both are equally highly regarded. This would suggest that experience is both an explicit factor and a latent factor, an assertion given support by the strong connection found between professional experience and perceived discussion promoting power. It is worth noting at this point that the courses under study were graduate courses and of a moderate to highly technical nature. Whether similar patterns would hold for undergraduate classes or less technical domains is an open question and one I hope to address in the future.

We have also found tentative evidence that extensive instructor intervention in discussions boards may not be necessary and may possibly even be counter-productive in the sense that having the instructor firmly at the center of the discussion can detract from peer to peer communication and possibly inhibit collaborative knowledge building. This latter finding is somewhat speculative as it is based on two very different groups.

7.1 How do online discussions work?

There are a number of overarching themes that emerge from this research, some are fairly predictable and others, perhaps, less so. Deep collaborative discussions seem to rely on a number of factors. It seems that both social and cognitive behaviors are important in promoting discussion, for instance many participants seem to need positive feedback, the sense that their posts are valued (Vicarious-Acknowledger) and that this can be coupled with active facilitation which includes both social (e.g. "great idea Fred") and cognitive elements (e.g. "great idea Fred, we also need to look at…."). It seems that the presence (or perceived presence) of strong core participants (Thought-Leaders) can encourage participation. We have also seen that students adopt a wide variety of criteria for assessing how important their peers are. These can vary from raw volume, a vague sense of "quality" to a respect and admiration for the professional background of peers and their capability to draw participants into discussion. It seems that some types of behaviors (such as facilitation) are more effective at inspiring such responses and getting students to iteratively engage in deepening discussion going though cycles of internalization and externalization. While Garrison and Anderson's model shows the importance of social, cognitive and pedagogical presences this research has suggested that students can by themselves fulfill all of these functions. In course IS-1A students appeared to learn from each other with the only instructor input being the initial topic that started the process, students themselves framed and create their own questions. Further it appears that outcomes are highly situated, that differences in knowledge domain can affect the extent to which different types of behaviors are more or less effective and that courses themselves may be handled in quite radically different ways and yet still achieve success. It seems that the extension of Kappelman and McLean's framework shows some promise

as a tool for analyzing interactions, where there is social engagement, a combination of cognitive and social commitment to group learning, it can presage deepening discussion. In touching on engagement it appears that it may be wise to assess engagement not in gross terms of messages posted but in the extent to which a person contributes value either by inspiring others to participate or by providing thoughtful messages which students can reflect upon and which also act to build knowledge. It appears that even students who may not contribute a great deal may be influenced by the messages of peers; this vicarious learning allows students to construct their own knowledge through the observation of the process taking place in others. Such vicarious learners have in the past been looked down one as freeloaders or lurkers but are yet benefiting from the process one step removed.

7.2 Limits of study

There are a number of limit with this study. The detailed qualitative analysis was carried out on a single sample. It would be desirable to repeat the analyses with several more samples. Similarly, the sample was not chosen randomly. The course IS-1A was chosen as it showed more peer interaction than other courses.

The students under study were graduate students; these may arguably be more committed as most were more mature and were also practicing industry professionals or putative professionals. Whether undergraduate students would show the same types of behaviors is an open question.

There was something of a gender imbalance between the courses, overall more there were more females students than male students but some course were highly skewed in one direction or another.

The questionnaire could have delved deeper into student perceptions, having found some differences in attitudes there are open questions as to the etiology of these variations, while some students were quite forthcoming others might have provided more valuable data had I asked explicitly.

The Anderson and Krathwohl scheme provided useful as an analytic scheme but on occasion messages could not be coded, it seems that some socio-cognitive elements are not easily captured; it may be valuable to look at ways of adapting this scheme.

Finally, the study involved domains that were slightly or highly technical; even within these two domains there were differences. Students in the domains under study could be expected to be highly familiar with technological environments and this comfortable in the use of the discussion boards. Would students from Arts or Humanities domains be as comfortable and thus, behave in the same manner?

7.3 Further work

There are a number of additional questions I would like to explore. I have already touched on the potential importance of language in forming students perceptions. I would like to explore this aspect more, specifically to what extent does the precise form of

language impact on the extent to which social engagement is encouraged, and does a form of language inhibit or inspire greater levels of engagement.

I would also like to explore the issue of perception of Thought-Leaders and gender. In course IS-1A the most objectively influential participant (S20) was not regarded as a Thought-Leader despite contributing a great deal, and was also female, perhaps a coincidence, but I wonder if male participants are held in higher regard by peers. Similarly, do participants vote with their gender in terms of deciding who they regard as most important? Related to these two questions is it possible to say that students' language is gender specific. S20 used much more diffident language is this a common feature and if so what implications does this have?

From the results achieved I feel that it may be necessary to refine the Waters and Gasson scheme. Going back to a grounded theory approach and examining a larger sample of interactions. For instance in the course analyzed in depth there were no occurrences of the "Initiator" role-behavior. Also it seems that the Complicator role-behavior shows levels of differentiation between building specifically on prior contributions and being rather more speculative "I wonder if…." Under the existing scheme both types of behavior show up as the same but it seems that the more speculative type of behavior has less influence. It also seems likely that the Contributor role-behavior needs to be reevaluated; this role-behavior includes anecdotes put forward to support a position. Often these are quite trivial and of limited use in promoting discussion. However, it is clear that at times these stories may have great power and the impact of them appears to

stay with the readers. This is illustrated by the extent to which these "war stories" were deemed important when participants chose Thought-Leaders, it may be that a separate role-behavior of story teller may have some utility.

It would also be interesting to see if these patterns of Thought-Leader behaviors occur in different contexts. Would Thought-Leaders emerge in face-to-face classes? Would clear central participants emerge in classroom discussions when there is normally such a central focus on the instructor? Similarly, would the patterns hold where there were small groups, rather than the 22 to 25 participants in the classes under study?

Finally, I would also like to repeat my analysis with samples taken from different types of knowledge domain. All the course analyses spring from a moderately to highly technical domain. Would similar patterns of behavior be seen with less technical domains? Would the nature of online discussion alter greatly for social science or arts domains?

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8. Appendix A: Qualitative Analysis of threads

This appendix describes the method used for selecting a sample of discussion board threads from the selected course (IS-1A). The appendix then describes the methods used for the analysis. This is followed by the analysis of the threads. Each thread is a self-contained sequence of messages that has a definable start and end point. Each thread is identified by the week of the course the discussion took place in, the question number for that week (1 or 2) and the thread number for that question. Thread number relates to the order in which thread opening messages appear. In the example below S20's message was the third opening message for that question for that week.

```
County Library S20 2/7/08 12:27 PM                              [1]
        RE: County Library S7 2/8/08 4:51 PM                    [2]
                RE: County Library S20 2/9/08 12:27 PM          [3]
        RE: County Library S6 2/8/08 11:37 PM                   [4]
        RE: County Library S8 2/10/08 11:11 AM                  [5]
        RE: County Library S13 2/10/08 6:39 PM                  [6]
                RE: County Library S20 2/11/08 7:28 AM          [7]
                        RE: County Library S7 2/11/08 11:39 AM  [8]
My final ERD S20 2/12/08 1:26 PM                                [9]
        RE: My final ERD S7 2/13/08 11:53 AM                    [10]
                RE: My final ERD S20 2/13/08 1:17 PM            [11]
                        RE: My final ERD S15 2/13/08 6:03 PM    [12]
        RE: My final ERD S3 2/13/08 8:02 PM                     [13]
RE: County Library S19 2/13/08 10:43 PM                         [14]
        RE: County Library S20 2/14/08 8:07 AM                  [15]
```
Figure 8.1 Example of a thread outline

In the example above, student S20 posts the opening message. This is followed by a number of replies some replies [2, 4, 5, 6, 9, and 14] are direct replies to the first post. These are shown indented by one level. Other replies are replies to replies so for instance S20 in message 3 replies to S7'a reply (message 2), S20's message (message 3) is Thus, shown indented by another level and so on. The sequence 1, 9, 10, 11 and 12 shows a set

of replies to replies each direct reply causing the thread to deepen this sequence ends with

a depth of 5. The outline above shows the original message and all replies to the original

message and all replies to replies. All the threads are shown thus, no reply to a message

in a given thread is excluded from analysis.

The outline of each selected thread is shown in full. After each outline the text of each

message in the thread is shown in tabular form twice, once for each analysis method.

Each table shows the text of the message in the left hand column divided into logically

independent segments and in the right hand column a description of the behavior

demonstrated by the text segment. The example below shows a two message thread

analyzed according to the Waters and Gasson scheme, described in detail later.

Testing   S22 3/16/08 2:37 AM
      RE: Testing S4   3/16/08 5:19 PM
Figure 8.2 A short thread outline

Message	Behavior Type (Waters and Gasson)
S22 3/16/08 2:37 AM Testing should be done all throughout the development process, to catch problems as they arise, fix them, and continue to work out bugs until the system is implemented and placed into use by the consumer.	Contributor
Testing should involve all those personnel involved form the beginning to culmination to ensure the right program is delivered to those who will use it the most. (Whitten & Bentley, p688-689.)	Contributor
S4 3/16/08 5:19 PM Having all the personnel involved throughout the testing processes is a good idea especially the end users who really are going those that are most affected by any and all changes made to the system. S4	Vicarious-Acknowledger

8.1 Thread Sampling

Since there are 352 threads this is too many to qualitatively analyze each of them. The
following general sampling process was chosen.

- Select all the "Best" threads for analysis
- Derive a ranking for "High message" threads, "Average" threads and "Low message" threads
- Select all "High message" threads
- Select a small sample of threads from the Average and Low messages threads

8.2 Ranking threads

There are three basic quantitative characteristics of an asynchronous discussion board thread of interest

- Number of messages in the thread (M)
- Maximum depth of the thread (D)
- Number of different participants in the thread (P)

The details of each of the threads were loaded into a spreadsheet. The details included

- The week of the course
- The question number for that week (1 or 2)
- The thread for that question in chronological start order
- The number of messages for that thread(M)
- The maximum depth of that thread(D)
- The number of participants for that thread(P)

Three different sorts were performed on the thread details

- Messages-Depth-Participants (MDP)   #1
- Number of Messages in thread(descending) then
- Maximum depth of thread (descending) then
- Number of participants in thread (descending)

- Depth-Participants-Messages (DPM)   #2
- Maximum depth of thread (descending) then
- Number of participants in thread (descending)
- Number of Messages (descending)

- Participants-Messages-Depth (PMD)   #3
- Number of participants in thread (descending) then
- Number of Messages in thread (descending) then
- Maximum depth of thread (descending)

This produced three ordered lists of threads where each fundamental characteristic of

interest was equally influential as each occupied sort order positions of 1, 2 and 3.

8.3 Selection of Threads

From each of the sorted lists the top 10 threads were chosen. Since many threads

occupied top positions in 2 or 3 sort lists the next 5 threads were chosen from each list.

The end result is that 25 threads were selected for a final sort list. From this list 14 had

between 9 and 15 messages, these were designated as Best threads. The next 8 threads

had between 6 and 8 messages; these were designated as high message threads. The Final

three threads had only 5 messages. Since the average number of messages per thread is

3.78 messages threads with 3 to 5 messages are designated Average message Threads.

Average messages were Thus, returned to the pot for random selection. Threads with less

than 3 messages are designated Low message threads.

8.4 Good Threads selected

Number	Week	Question	Thread	Messages	depth	participants
Best Threads						
1	5	1	3	15	5	8
2	6	1	10	12	7	8
3	6	1	3	11	3	9
4	9	1	9	11	3	7
5	3	2	12	11	4	9
6	3	1	1	9	5	7
7	10	1	12	11	6	9
8	6	1	4	10	4	6
9	7	1	11	10	4	4
10	2	1	22	9	4	7
11	2	1	5	9	4	6
12	5	1	8	9	4	6
13	5	1	4	9	5	4
14	5	1	12	9	9	5
High Message Threads						
15	3	2	8	8	2	8
16	9	1	2	8	2	8
17	1	2	4	8	3	7
18	2	2	15	8	3	7
19	4	1	3	8	6	5
20	10	1	6	7	3	7
21	7	1	9	7	6	4
22	7	1	14	6	5	3

8.5 Selection of remaining Threads from strata

Since the three sort orders are extremely difficult to align I decided to use the number of messages in a thread as a stratifying criteria. Thus, the threads were stratified as follows

Table 8.1 Selection of threads

	Number of Messages in thread	Messages chosen for analysis
Top Threads	9 to 15	All (14)
High message Threads	6 to 8	All(8)
Average message threads	3 to 5 (Average is 3.78)	5 • 2 x 3 • 1 x 4 • 2 x 5
Low message threads	2	5

Threads with a single message were not chosen since the vast majority of these occurred late in the week in question; only two messages that were posted mid-week were not responded to.

8.6 Threads chosen for analysis by stratified sample

Number	Week	Question	Thread	MESSAGES	depth	participants
Average Threads						
23	6	1	1	5	5	4
24	7	1	17	5	2	2
25	1	2	12	4	2	4
26	1	1	10	3	3	3
27	1	2	19	3	2	2
Low message threads						
28	1	1	6	2	2	2
29	2	1	10	2	2	2
30	3	1	7	2	2	2
31	6	1	14	2	2	2
32	10	1	20	2	2	2

8.7 Complete lists of threads chosen

	Week	Question	Thread	MESSAGES	depth	participants
Best Threads						
1	5	1	3	15	5	8
2	6	1	10	12	7	8
3	6	1	3	11	3	9
4	9	1	9	11	3	7
5	3	2	12	11	4	9
6	3	1	1	9	5	7
7	10	1	12	11	6	9
8	6	1	4	10	4	6
9	7	1	11	10	4	4
10	2	1	22	9	4	7
11	2	1	5	9	4	6
12	5	1	8	9	4	6
13	5	1	4	9	5	4
14	5	1	12	9	9	5
High Message Threads						
15	3	2	8	8	2	8
16	9	1	2	8	2	8
17	1	2	4	8	3	7
18	2	2	15	8	3	7
19	4	1	3	8	6	5
20	10	1	6	7	3	7
21	7	1	9	7	6	4
22	7	1	14	6	5	3
Average Threads						
23	6	1	1	5	5	4
24	7	1	17	5	2	2
25	1	2	12	4	2	4
26	1	1	10	3	3	3
27	1	2	19	3	2	2
Low message threads						
28	1	1	6	2	2	2
29	2	1	10	2	2	2
30	3	1	7	2	2	2
31	6	1	14	2	2	2
32	10	1	20	2	2	2

8.8 Analysis methods

Each thread is coded twice. Using schemes from Waters and Gasson (2005) and

Anderson and Krathwohl (2001)

8.9 Coding schemes

8.9.1 Waters and Gasson coding scheme

A single dominant role-behavior for each message was considered too crude a measure as

it can hide a range of different role-behaviors, Thus, to effectively examine the incidence

of different types of role-behaviors it was necessary to have a finer grained unit of

analysis. Consequently each message was split into a number of thematic units using a

method derived by Henri (1991), these will be referred to as segments for simplicity.

Under Henri's scheme a segment is a single unit of meaning that contains a single

logically coherent idea or a complete chain of argument or concept. Adapting this

approach to the Waters and Gasson scheme involves coding logically identifiable

separate instances of the role-behaviors described by Waters and Gasson (2005). This

method allows a much richer picture of the different types of role-behaviors. For instance

a message that might have been coded as having a dominant role-behavior type of

Contributor might hide some small but very important facilitating behaviors. In the

Waters and Gasson scheme each segment can show one of seven active types of

interaction behavior (see section 3.6.1.2 for descriptions of behavior types)

Message segments which fit none of these categories are coded as null.

Behavior Name	Description	Abbreviation
Initiator	These behaviors are **predominantly social**. These messages are often unrelated to the work in hand, and aim to set up and to maintain a social network of people with whom to interact. These messages can look for points of connection such as affiliations, occupations or hobbies.	Initiator

	Variants include simply commenting on another participant's background and asking general questions. .	
Contributor	These behaviors predominantly represent a minimal (grade-earning) obligation to contribute. This can be an initial answer to a instructor question such as *I think that* or *here is my diagram for the system* etc Such messages can add a viewpoint on the existing debate, but do not fundamentally change the nature of the debate. These messages may add to one position or another frequently by using examples from personal; experience, or just quoting examples from course materials or external sources contributors may also explain positions i.e. "*I did this because…"or this is what I did*	Contributor
Facilitator	These behaviors attempt to draw out further debate on a question. Can include a question about a prior contribution i.e. *"Why did you use this model not XXX"* These messages may include community-oriented questions, such as "how would this happen?", or "I disagree with XXX but what do you think?". Such messages often resolve external or logistical problems for other students, Messages may moderate discussions, warn the community when a debate is wandering off topic, and Messages may actively purposely acknowledge other students' contributions i.e. *Bill makes a good point we need to consider.…*	Facilitator
Complicator	Complicator behaviors reframe or redefine an existing position. This can be a response to an initial posed question or a response to someone else's response to the question. These messages can suggest alternative perspectives, point out inconsistencies in arguments, provide alternatives or alternative approaches and show complications that arise form an approach.	Complicator

Peer Knowledge elicitor	A peer-knowledge-elicitor behavior is a request for information from peers including
	    • What to do,
	    • What does something mean ?
	    • How to approach a task and why
	A request for feedback on a students own contributions
		P-K-E

Vicarious-Acknowledger	A vicarious acknowledger behavior demonstrates a recognition that someone else's contribution influenced their perspective (in a positive or negative way).**but does not use this to advance the debate**.	V-A
Closer	A "Closer" behavior an attempt to pull together a final or coherent answer to the question. This often attempts to bring a debate to a conclusion by reconciling differences and combine threads of arguments.	Closer

8.9.2 Anderson and Krathwohl Coding Scheme

The Knowledge Dimension	The Cognitive Process Dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge						
Conceptual Knowledge						
Procedural Knowledge						
Meta-cognitive Knowledge						

Figure 8.3 Anderson and Krathwohl's cognitive dimension

The Anderson and Krathwohl taxonomy divides learning into two dimensions Knowledge and Cognitive Processes. The scheme uses only the Cognitive Processes dimension; investigating the manipulation or creation of knowledge not the exact form of knowledge.

A single dominant role-behavior for each message was considered too crude a measure as it can hide a range of different role-behaviors, Thus, to effectively examine the incidence of different types of role-behaviors it was necessary to have a finer grained unit of analysis. Consequently each message was split into a number of thematic units using a method derived by Henri (1991), these will be referred to as segments for simplicity. Under Henri's scheme a segment is a single unit of meaning that contains a single logically coherent idea or a complete chain of argument or concept. Adapting this approach to the Anderson and Krathwohl scheme involves coding logically identifiable separate instances of the cognitive behaviors described by Anderson and Krathwohl (2005). The cognitive dimension distinguishes the way that participants interact with knowledge. Such interaction can be of six different types.

- Remember – Recognize or Recall
- Understand – Interpret, Exemplify, Classify, Summarize, Infer, Compare, Explain
- Apply – Execute, Implement (choose law or procedure or model)
- Analyze – Differentiate, Organize, Attribute (determine POV etc)
- Evaluate – Check (does it follow), Critique (determine which is better)
- Create – Generate hypothesis, Plan, Produce

Table 8.2 Anderson and Krathwohl coding scheme

Cognitive behavior and subtype		Description
Remember		The lowest level of cognitive process and refers to extracting knowledge from memory.
Subtype	Recognize	Retrieving knowledge from long term memory that relates to presented material.
Subtype	Recall	This is prompted retrieval of relevant knowledge. Information is searched for in memory to fit a request (explicit or derived)
Understand		To construct meaning from supplied material – building connections between old knowledge and new knowledge
Subtype	Interpret	Converting information from one form to another – paraphrasing, describing a picture in words, creating a diagram from words, changing words to numbers...
Subtype	Exemplify	Stating or producing a specific example of a general concept or principle
Subtype	Classify	The reverse of exemplifying. A specific example is placed within a general concept or principle
Subtype	Summarize:	Creating a short description or abstracting general themes or main points from information
Subtype	Infer:	This means finding a pattern within a set of examples or abstracting a principle that explains examples.
Subtype	Compare	Detecting differences or similarities between two or more objects, events, ideas, problems or situations.
Subtype	Explain	Constructing or using a cause and effect model of a system
Apply		Using procedures to perform a task or solve a problem
Subtype	Execute	Carrying out a procedure relating to familiar tasks
Subtype	Implement	(law or procedure or model): Selecting and using a procedure to perform an unfamiliar task.
Analyze		breaking material into parts and determining how the parts form an overall structure
Subtype	Differentiate	This means determining which parts of a structure are relevant or unimportant
Subtype	Organize	Building coherent connections between pieces of information
Subtype	Attribute	Ascertaining the point of view, biases, values or intents in a communication, determine POV etc
Evaluate		Making judgments about material presented based on certain criteria such as consistency, efficiency and so on
Subtype	Checking	assessing if inconsistencies or fallacies exist in materials. E.g., when a product, conclusion or hypothesis does or does not follow from the supplied information or if data supports or does not support a hypothesis
Subtype	Critiquing	Judging a product or operation or argument based on a set of criteria – noting positive or negative features of a product or message
Create		Putting elements together to create a coherent whole; this can include reorganizing an existing model. Something new is created – it can be a

		new set of hypotheses, a new plan for a solution or a new product
Table 8.2 Anderson and Krathwohl coding scheme (continued)		
Subtype	Generating	Arriving at alternatives or hypotheses that meet certain criteria with regard to a problem
Subtype	Planning	Devising a single solution that fits with a problem. This solution may not solve the problem but outlines a method and steps to how the problem could be solved.
Subtype	Producing	Carrying out a plan for solving a problem

8.10 Analysis of selected threads

8.10.1 Week 5 Question 1 Thread 3 (Waters and Gasson)

County Library S20 2/7/08 12:27 PM	[1]
RE: County Library S7 2/8/08 4:51 PM	[2]
RE: County Library S20 2/9/08 12:27 PM	[3]
RE: County Library S6 2/8/08 11:37 PM	[4]
RE: County Library S8 2/10/08 11:11 AM	[5]
RE: County Library S13 2/10/08 6:39 PM	[6]
RE: County Library S20 2/11/08 7:28 AM	[7]
RE: County Library S7 2/11/08 11:39 AM	[8]
My final ERD S20 2/12/08 1:26 PM	[9]
RE: My final ERD S7 2/13/08 11:53 AM	[10]
RE: My final ERD S20 2/13/08 1:17 PM	[11]
RE: My final ERD S15 2/13/08 6:03 PM	[12]
RE: My final ERD S3 2/13/08 8:02 PM	[13]
RE: County Library S19 2/13/08 10:43 PM	[14]
RE: County Library S20 2/14/08 8:07 AM	[15]

Student: Date/Time message	Content Analysis of message
S20 2/7/08 12:27 PM Hi everyone -**Here I go, stepping out on a limb to post the first ERD. Please be constructive with your criticism**! **It was hard to tell how detailed to be, because these diagrams can get really picky.** I'll be interested to see how other people organized the county library. Hopefully, all the lines and boxes will translate okay. I saved mine in .doc format. thanks,	Contributor, starts discussion, prompts others to do the same(3) Peer-Knowledge-Elicitor, asks for feedback(2) Contributor: Comments on difficulty of task, comments on procedural issues (saving file in specific format) (3)
S7 2/8/08 4:51 PM Hi S20! I have a couple of questions: 1.) **What are that dashed lines (around employees and supervisors and around Resources) representing**? 2.) Why did you add a third resource for "Book Publisher Resource"? **Wouldn't that be included in the book resource?** I just posted my own County Library ERD and I hope I didn't oversimplify. Please critique!, S7	Response from S7 to S20 Peer-Knowledge-Elicitor, asks for explanation of S20 diagram, asks for feedback Facilitator, critiques diagram Complicator, suggests alternative approach, reframing problem
S20 2/9/08 12:27 PM Hi S7 - 1) I put the dashed lines around those two groups because "Resource" is a supertype for book, cd, and book publisher. Likewise, "Employee" is a supertype for manager and staff (discussed under the Generalization section on p. 283). On p.295-6, diagram 8-15 shows a dashed box around the generalization hierarchy, so I added it into my own	Response from S20 to S7 Facilitator: Explains approach provides source of argument PKE- - asks if approach is correct, several times

ERD to show where the separate supertype-subtype hierarchies were. I don't know if this is a requirement for an ERD, but it helped me to keep things straight. 2) **The county description said that details were maintained at the library on book publishers but not on cd publishers. However, it also stated that someone could search by publisher for both items. So, I imagined that the library must have some sort of database of book publishers and their general information - like addresses, th**e owners, etc. I thought this was a resource that library members could use, just like books and cds. Also, since this book publisher database includes data that the library maintains, I thought it should be included in the ERD. I had a terrible time figuring out how it fit in, and I still wonder if it should be there at all (it was my biggest question mark). So I'm definitely taking a look at your ERD to compare! Thanks,	Complicator: Shows contradictions in the requirements statement and difficulties in resolving tem
S6 2/8/08 11:37 PM Hello, **I thought both of your County Library examples were well done. They showed the different degree of detail you can use in an ERD. As you can see I can learn a lot from both of you! S6**	Facilitator: Positive feedback Contributor describing how level of detail may be different Vicarious-Acknowledger : I learned from ..
S8 2/10/08 11:11 AM Hi S20, I found your ERD very complete, and in fact, very helpful to me in revising the customer order entry diagram which I posted. I looked at the way you handled the various employee designations an supervision over both the employees and the relationship to the county library membership to help me with the employee portion and how to apply the diagram to that employee packaging the order and sending it to the customer. I found enough similarities to help with that problem. After carefully reviewing your post, since I don't have any comments yet on my post, I think I can now go back and revise my post. Thanks for your completeness. S8	Facilitator : Positive feedback vicarious-Acknowledger : I learned from Contributor: Saw similarities between two cases
S13 2/10/08 6:39 PM Your ERD was very helpful to me in trying to figure out how to do this. I saw a lot of different versions of the county library and yours was detailed but still to the point. I was unsure as to which relationships to present for certain entities. I like how you presented multiple connections between branch and member to clarify the quantity of different relationships. There were some connections that I did not think to put into my diagram like the relationship between employee and resource. I'm still learning how to do all of this, but your presentation helped me understand a lot more. Thanks!	Response from S13 to S20 Facilitator : Positive feedback, best version Vicarious-Acknowledger : I learned from
S20 2/11/08 7:28 AM So glad I was able to help (and S8, too)! I spent some time talking with xxxxxxxx to get a handle on it xxxxxx is a logic master. :-) I find myself wondering about S14's comments (in another library county thread) about whether the relationship between the employee and the patron are relevant to the system. I'm sure they are - it's a library! - but am trying to figure out how to put it in. **Maybe some sort of membership request form" entity or "reference question" entity that could represent the different processes that occur within the system** that are initiated by an employee-patron interaction? Or would that be getting too complex? S20	Complicator: Questioning the value of representing some relationships Vicarious-Acknowledger referring to S14 Peer-Knowledge-Elicitor: Asking for opinion on position Contributor: Puts forward own opinion
S7 2/11/08 11:39 AM Hi S20!, I just put something very similar into my thread (responding to S14's thoughts). I just didn't find a better term, but that relationship has to be there I think. S7	Response from S7 to S20 Vicarious-Acknowledger Facilitator : Positive feedback Contributor: Posits own position
S20 2/12/08 1:26 PM Hi everyone -I've attached my revised ERD. Here are some resolutions I came to after our (very thought-provoking!) discussions: 1. I put in "loan transaction" because when an item is loaned, it must be recorded somehow in the system. It also is a relevant way that the member interacts with the resources and the system. I just used the PK's from "member" and "resource" to identify the loan transaction's PK - a concatenated key. I figured that there is one member and one resource for each transaction - even if someone is checking out a huge pile of books, each book counts as an individual transaction in the system.	Broadcast message Facilitator: Praises contributors Contributor; Explains reasoning P-K-E : requests feedback Closer : reconciles opposing positions

2. I put in "**Reference search" as a way to reconcile our debate about the employee-member relationship with the data system**. (I think this was above-and-beyond effort but was keen on trying to figure it out anyway.) The "Search ID [PK]" is just a generic ID given to a search by the computer system and doesn't really mean anything other than giving the search a unique name - it doesn't ID the member or employee in any way. The time/date stamp just records when the search was done. This is probably information that would be kept in a cache and emptied at the end of the day, and may be referenced by employees to record a helpful/efficient search tactic for future reference assistance. The employee could reference the search ID before it's deleted, and then record the steps in Word or some other program (without identifying the patron in any way). Having not worked in a library with a computerized system, I don't know how feasible this event entity is, but I thought I'd throw it out there and see what you all thought. Thanks, S20	
S7 2/13/08 11:53 AM Hi S20, On your final ERD I don't quite understand why you have two PK's in your Loan Transaction entity. Isn't a PK a One and only thing? Can you have two PKs? Or should one of those be called something else? S7	Response from S7 to S20 Facilitator: provokes answer Complicator Critiques, finds error in design
S20 2/13/08 1:17 PM It's a concatenated key (see p. 273 in textbook) - a group of attributes that identifies an entity. Both of these keys are needed to identify one loan transaction. Without the call number, we wouldn't know which material the member checked out. Likewise, without the member number, we would know which member checked out the material. So, we wouldn't be able to specifically identify that single transaction without both keys. There's also an example on the ERD on p. 307. – S20	Response from S20 to S7 Contribution: explains reasoning, provides external resource
S15 2/13/08 6:03 PM I just wanted to let everyone involved in this discussion know that I found it very helpful. My ERD is on Student Accommodation. However, the County Library ERD seemed to be a popular choice so I found myself getting acquainted with it. I wasn't sure what the dotted lines meant, or if you could put two PK's with an entity, thanks for clearing all this up for me.	Broadcast response from S15 Vicarious -Acknowledger: praises other contributions
S3 2/13/08 8:02 PM S20, Both of your ERDs were great. I really like the loan transaction on your revision. The actual transaction is essential to the library process. Your models and explanatory posts were invaluable. S3	Response from S3 to S20 Facilitator Vicarious-Acknowledger
S19 2/13/08 10:43 PM S20 - Your diagram really helped me see what needed to be improved about mine. It looks great! I'm still having some confusion over the dotted lines between entities.	Response from S19 to S20 (message 1) Vicarious Acknowledger P-K-E :asks about dotted lines
S20 2/14/08 8:07 AM I actually got most of my understanding of the solid line v. dotted line between two entities from S10's thread. I basically read S10's explanation and the explanation in the text (p. 278-9) over and over and over again. Hopefully, I got it right. Here's how I understand it: If an entity helps to define another entity (shares a primary key, for example), then it needs a solid line - because it is an identifying relationship. However, if the entities don't define each other (an employee works at a specific branch, but the branch doesn't define the person's SSN, nor does the employee define the branch's name), then it is a nonidentifying relationship. It needs a dotted line (but only if you need to connect them to define how they interact!). S20	Response from S20 to S19 Vicarious-Acknowledger Contrition: Explains position

9.10.2 Week 5 Question 1 Thread 3 (Anderson and Krathwohl)

County Library S20 2/7/08 12:27 PM   [1]
    RE: County Library S7 2/8/08 4:51 PM   [2]
        RE: County Library S20 2/9/08 12:27 PM   [3]
    RE: County Library S6 2/8/08 11:37 PM   [4]
    RE: County Library S8 2/10/08 11:11 AM   [5]
    RE: County Library S13 2/10/08 6:39 PM   [6]
        RE: County Library S20 2/11/08 7:28 AM   [7]
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My final ERD S20 2/12/08 1:26 PM   [9]
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Student: Date/Time message	Content Analysis of message
S20 2/7/08 12:27 PM Hi everyone -**Here I go, stepping out on a limb to post the first ERD. Please be constructive with your criticism**! **It was hard to tell how detailed to be, because these diagrams can get really picky.** I'll be interested to see how other people organized the county library. Hopefully, all the lines and boxes will translate okay. I saved mine in .doc format. Thanks,	Understand (Interpreting) Apply(Implementing): Analyze: differentiating
S7 2/8/08 4:51 PM Hi S20! I have a couple of questions: 1.) **What are that dashed lines (around employees and supervisors and around Resources) representing**? 2.) Why did you add a third resource for "Book Publisher Resource"? **Wouldn't that be included in the book resource?** I just posted my own County Library ERD and I hope I didn't oversimplify. Please critique!, S7	Evaluate (Critiquing) critiques diagram, suggests alternative approach.. Checking testing for consistency
S20 2/9/08 12:27 PM Hi S7 - 1) I put the dashed lines around those two groups because "Resource" is a supertype for book, cd, and book publisher. Likewise, "Employee" is a supertype for manager and staff (discussed under the Generalization section on p. 283). On p. 295-6, diagram 8-15 shows a dashed box around the generalization hierarchy, so I added it into my own ERD to show where the separate supertype-subtype hierarchies were. I don't know if this is a requirement for an ERD, but it helped me to keep things straight. 2) **The county description said that details were maintained at the library on book publishers but not on cd publishers. However, it also stated that someone could search by publisher for both items. So, I imagined that the library must have some sort of database of book publishers and their general information - like addresses, th**ers, etc. I thought this was a resource that library members could use, just like books and cds. Also, since this book publisher database includes data that the library maintains, I thought it should be included in the ERD. I had a terrible time figuring out how it fit in, and I still wonder if it should be there at all (it was my biggest question mark). So I'm definitely taking a look at your ERD to compare! Thanks,	Response from S20 to S7 Understand Exemplify, shows resource as a supertype) Explaining approach Analyze (decomposition into different parts) Apply (uses techniques to construct ERD) Evaluate (Critique) tentative critique of own design
S6 2/8/08 11:37 PM Hello, **I thought both of your County Library examples were well done**. **They showed the different degree of detail you can use in an ERD. As you can see I can learn a lot from both of you! S6**	Response from S6 to S7 and S20 Understand
S8 2/10/08 11:11 AM Hi S20, I found your ERD very complete, and in fact, very helpful to me in revising the	Response from S8 to S20 Understand : Explaining relationships between entities

customer order entry diagram which I posted. **I looked at the way you handled the various employee designations an supervision over both the employees and the relationship to the county library membership to help me with the employee portion and how to apply the diagram to that employee packaging** the order and sending it to the customer. I found enough similarities to help with that problem. After carefully reviewing your post, since I don't have any comments yet on my post, I think I can now go back and revise my post. Thanks for your completeness. S8	
S13 2/10/08 6:39 PM Your ERD was very helpful to me in trying to figure out how to do this. I saw a lot of different versions of the county library and yours was detailed but still to the point. I was unsure as to which relationships to present for certain entities. I like how you presented multiple connections between branch and member to clarify the quantity of different relationships. There were some connections that I did not think to put into my diagram like the relationship between employee and resource. I'm still learning how to do all of this, but your presentation helped me understand a lot more. Thanks!	Response from S13 to S20 Evaluate : critiquing own model Understand : Comparing own model and other example
S20 2/11/08 7:28 AM So glad I was able to help (and S8, too)! I spent some time talking with xxxxxxxx to get a handle on it xxxxxx is a logic master. :-) I find myself wondering about S14's comments (in another library county thread) about whether the relationship between the employee and the patron are relevant to the system. I'm sure they are - it's a library! - but am trying to figure out how to put it in. **Maybe some sort of membership request form" entity or "reference question" entity that could represent the different processes that occur within the system** that are initiated by an employee-patron interaction? Or would that be getting too complex? S20	Response from S20 to S13 (Prior message) and S8 Evaluate : Critique of prior thread, critique of own model Create : Creating hypothesis
S7 2/11/08 11:39 AM Hi S20!, I just put something very similar into my thread (responding to S14's thoughts). I just didn't find a better term, but that relationship has to be there I think. S7	Response from S7 to S20 Understand Compare Evaluate : Critique
S20 2/12/08 1:26 PM Hi everyone -I've attached my revised ERD. Here are some resolutions I came to after our (very thought-provoking!) discussions: 1. I put in "loan transaction" because when an item is loaned, it must be recorded somehow in the system. It also is a relevant way that the member interacts with the resources and the system. I just used the PK's from "member" and "resource" to identify the loan transaction's PK - a concatenated key. I figured that there is one member and one resource for each transaction - even if someone is checking out a huge pile of books, each book counts as an individual transaction in the system. 2. I put in "**Reference search" as a way to reconcile our debate about the employee-member relationship with the data system**. (I think this was above-and-beyond effort but was keen on trying to figure it out anyway.) The "Search ID [PK]" is just a generic ID given to a search by the computer system and doesn't really mean anything other than giving the search a unique name - it doesn't ID the member or employee in any way. The time/date stamp just records when the search was done. **This is probably information that would be kept in a cache and emptied at the end of the day, and may be referenced by employees to record a helpful/efficient search tactic for future reference assistance. The employee could reference the search ID before it's deleted, and then record the steps in Word or some other program [hyp]**(without identifying the patron in any way). Having not worked in a library with a computerized system, I don't know how feasible this event entity is, but I thought I'd throw it out there and see what you all thought. Thanks, S20	Broadcast message Understand: Explains reasoning Analyze: Organize structure Evaluate critique: Corrects flaws with prior model, reconciles contradictions Create: Creates hypothesis ;[hyp]
S7 2/13/08 11:53 AM Hi S20, On your final ERD I don't quite understand why you have two PK's in your Loan Transaction entity. Isn't a PK a One and only thing? Can you have two PKs? Or should one of those be called something else? S7	Response from S7 to S20 Evaluate Critiques, finds error in design
S20 2/13/08 1:17 PM It's a concatenated key (see p. 273 in textbook) - a group of attributes that identifies an entity. Both of these keys are needed to identify one loan transaction. Without the call number, we wouldn't know which material the member checked out. Likewise, without the member number, we would know which member checked out the material. So, we wouldn't be able to specifically identify that single transaction without both keys. There's also an example on the ERD on p. 307. – S20	Response from S20 to S7 Understand : explains reasoning, compares own model to text

Message	Behavior Type
S15 2/13/08 6:03 PM I just wanted to let everyone involved in this discussion know that I found it very helpful. My ERD is on Student Accommodation. However, the County Library ERD seemed to be a popular choice so I found myself getting acquainted with it. I wasn't sure what the dotted lines meant, or if you could put two PK's with an entity, thanks for clearing all this up for me.	Broadcast response from S15 Understanding Inferring
S3 2/13/08 8:02 PM S20, Both of your ERDs were great. I really like the loan transaction on your revision. The actual transaction is essential to the library process. Your models and explanatory posts were invaluable. S3	Response from S3 to S20 Understanding:
S19 2/13/08 10:43 PM S20 - Your diagram really helped me see what needed to be improved about mine. It looks great! I'm still having some confusion over the dotted lines between entities.	Response from S19 to S20 (message 1) Understanding:
S20 2/14/08 8:07 AM I actually got most of my understanding of the solid line v. dotted line between two entities from S10's thread. I basically read S10's r explanation and the explanation in the text (p. 278-9) over and over and over again. Hopefully, I got it right. Here's how I understand it: **If an entity helps to define another entity (shares a primary key, for example), then it needs a solid line - because it is an identifying relationship. However, if the entities don't define each other (an employee works at a specific branch, but the branch doesn't define the person's SSN, nor does the employee define the branch's name),** then it is a nonidentifying relationship. **It needs a dotted line (but only if you need to connect** them to define how they interact!). S20	Response from S20 to S19 Understanding: Comparing prior thread to own knowledge. Explaining Analyze : Organizing elements

8.10.3 Week 6 -Question 1-Thread 10 (Waters and Gasson)

Library Schema -- V1 S14 2/17/08 3:35 PM   [1]
     RE: Library Schema -- V1 S12 2/17/08 6:38 PM   [2[
         RE: Library Schema -- V1 S14 2/17/08 7:41 PM   [3]
            RE: Library Schema -- V1 S17 2/17/08 8:04 PM   [4]
                RE: Library Schema -- V1 S14 2/17/08 11:29 PM   [5]
                   RE: Library Schema -- V1 S17 2/18/08 6:25 AM   [6]
         RE: Library Schema -- V1 S20 2/18/08 5:17 PM   [7]
            RE: Library Schema -- V1 S19 2/19/08 10:37 PM   [8]
                RE: Library Schema -- V1 S20 2/20/08 3:42 PM   [9]
                   RE: Lib Sche V1 S10 2/20/08 7:52 PM   [10]
     RE: Library Schema -- V1 S1 2/18/08 10:27 PM   [11]
     RE: Library Schema -- V1 S22 2/20/08 6:02 PM   [12]

Message	Behavior Type
S14 2/17/08 3:35 PM This is my first shot at the County Library schema. Next step is to work on referential and domain integrity. And I think I'll need to tweak some of the data values. But it's a start...S14	Contributor: Puts forward an initial message and describes plans
S12 2/17/08 6:38 PM You schema is very impressive, S14. You must have a background in this sort of stuff. My one question would be how your system would deal with more than one item with the same call #, because duplicate items are common with popular titles.	Vicarious – Acknowledgeder: Facilitator
S14 2/17/08 7:41 PM S12, Call me S14. Only the teachers in grade school called me xxx ;-) I guess it's kind of obvious I don't have any library experience.	Contributor: Self-effacing

I constructed my system with the idea that the call number was unique for every item. For example: Copy #1 of "War and Peace" might be 123456789001, and copy #2 would be 123456789002 -- reserving the last two digits of the call number for the copy number.	Contributor: describes solution for problem
How is it done in real libraries? S14	Peer-Knowledge –elicitor
Oh, the diagram was done with Microsoft Visio. It's a pain in the neck to learn it, but it draws nice diagrams	Contributor
S17 2/17/08 8:04 PM Hey S14, I like your schema.	Vicarious-Acknowledger
How did you get the datatypes to show? Did you visio?	Peer-knowledge elicitor
I tried getting mine to work that way but it never did. Thanks, S17	Contributor
S14 2/17/08 11:29 PM S17, To get the data types to show in Visio: Click on Database, then Options, then Document. Under the General tab, under Data types, select Show physical. Click OK and you're done. S14	Contributor
S17 2/18/08 6:25 AM Thanks S14. I never could have found out. I appreciate it. regards, S17	Vicarious-Acknowledger
S20 2/18/08 5:17 PM At libraries I've used, they do something like that with the call numbers for multiple copies. They'd have the call number... 687.43... and then put the copy number after it.... 687.43 001... for a unique call number. Anyway, it was something like that.	Contributor: calls on personal experience to show difference between abstract and concrete examples
I don't have much experience either. :-)	
I used the same idea in my ERD - each copy would have a unique call number, something like this: 687.43 001 Fre 687.43 002 Fre 687.43 003 Fre Thanks, S20	Contributor
S19 2/19/08 10:37 PM Just a thought... Instead of using call numbers, could the system implement barcodes instead? If I were to develop a system where each item had to have an identification number, I would assign them each a barcode, that way if there were multiple copies with the same ISBN, or the same call number the barcode could serve as an individualized primary key.	Complicator: reframes the discussion
This could also solve the issue of the absense of a call number or ISBN which happens. For example, for items that aren't offically published like some dissertations, there may not be a call number associated with it or an ISBN.	Closer: describes how solution resolves prior problems
S20 2/20/08 3:42 PM That's a really good idea. Thanks for mentioning it. :-)	Vicarious-Acknowledger
S10 2/20/08 7:52 PM To join in the discussion... Our system uses barcodes, and it works very well. Each copy of the same work has the same call number, but a different barcode.	Contributor: personal anecdote
S1 2/18/08 10:27 PM S14: You're a scholar! I'm really digging the way you created the supertype of person and seperated out address.	Vicarious-Acknowledger
I think that separating out the address is very useful in that it makes the address itself a searchable entity by which people can be idetified in an addition to their names and employee ID #'s. Creating address as an entity eliminates the redundancy needed for normalization. Nice work!	Facilitator: Moves address from a static text descriptor to a key entry that can be used for identification. Solves an
I did something similiar in my diagram, but it is weak and tepid compared to your visio	

special.	existing design problem,
I tried to make it clear in my diagram that every person was part of the county system and that there were lots of transactions going on. Not just loan transactions for members, but employee transactions as well. For this reason, I created two separate entities entitled employee transactions (to cover things like pay, leave, sick leave, etc) and member transactions (to cover borrowing, returning, fine paying, etc..).	Contributor

Complicator: |
| I also tried to make clear that employees can also be members so if they take out a book or cd we have a method of tracking them just like any other member. Maybe I got too far down into the weeds, I don't know. | Complicator

Vicarious-Acknowledger |
| Your diagram is awesome and it helped me sort out some issues I was having. Again, nice work! Very Respectfully, S1 | |
| S22 2/20/08 6:02 PM
S14,
I didn't do the library model, but I have to say your schema came out beautiful. It puts mine to shame. | Vicarious-Acknowledger |
| You may convert me over to Visio. (when I have time to learn it!) | |
| It looks like you spent many hours on it. Great job again! S22 | Vicarious-Acknowledger |

8.10.4 Week 6 -Question 1-Thread 10 (Anderson & Krathwohl)

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Library Schema -- V1 S14 2/17/08 3:35 PM                          [1]
        RE: Library Schema -- V1 S12 2/17/08 6:38 PM             [2[
            RE: Library Schema -- V1 S14 2/17/08 7:41 PM         [3]
                RE: Library Schema -- V1 S17 2/17/08 8:04 PM     [4]
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                        RE: Library Schema -- V1 S20 2/20/08 3:42 PM  [9]
                            RE: Lib Sche -- V1 S10 2/20/08 7:52 PM  [10]
        RE: Library Schema -- V1 S1 2/18/08 10:27 PM             [11]
        RE: Library Schema -- V1 S22 2/20/08 6:02 PM             [12]
```

Thread Content analyzed using Anderson and Krathwohl scheme

Message	Content Analysis of message Anderson and Krathwohl
S14 2/17/08 3:35 PM (1)
This is my first shot at the County Library schema.	Understand(Explain)
Next step is to work on referential and domain integrity.	Apply(Implement)
And I think I'll need to tweak some of the data values. But it's a start...S14	
S12 2/17/08 6:38 PM (2)
You schema is very impressive, S14. You must have a background in this sort of stuff.	
My one question would be how your system would deal with more than one item with the Same call #, because duplicate items are common with popular titles.	Evaluate (Critique)
S14 2/17/08 7:41 PM (3)
S12,
Call me S14. Only the teachers in grade school called me xxx ;-) I guess it's kind of	

obvious I don't have any library experience. I constructed my system with the idea that the call number was unique for every item. For example: Copy #1 of "War and Peace" might be 123456789001, and copy #2 would be 123456789002 -- reserving the last two digits of the call number for the copy number. How is it done in real libraries? S14......Oh, the diagram was done with Microsoft Visio. It's a pain in the neck to learn it, but it draws nice diagrams	Apply(implement)
S17 2/17/08 8:04 PM (4) Hey S14, I like your schema. How did you get the datatypes to show? Did you visio? I tried getting mine to work that way but it never did. Thanks S17	
S14 2/17/08 11:29 PM (5) S17, To get the data types to show in Visio: Click on Database, then Options, then Document. Under the General tab, under Data types, select Show physical. Click OK and you're done. S14	Apply(implement)
S17 2/18/08 6:25 AM (6) Thanks S14. I never could have found out. I appreciate it. regards, S17	
S20 2/18/08 5:17 PM (7) At libraries I've used, they do something like that with the call numbers for multiple copies. They'd have the call number... 687.43... and then put the copy number after it.... 687.43 001... for a unique call number. Anyway, it was something like that. I don't have much experience either. :-) I used the same idea in my ERD - each copy would have a unique call number, something like this: 687.43 001 Fre 687.43 002 Fre 687.43 003 Fre Thanks, S20	Apply(implement) Apply(implement)
S19 2/19/08 10:37 PM (8) Just a thought... Instead of using call numbers, could the system implement barcodes instead? If I were to develop a system where each item had to have an identification number, I would assign them each a barcode, that way if there were multiple copies with the same ISBN, or the same call number the barcode could serve as an individualized primary key. This could also solve the issue of the absense of a call number or ISBN which happens. For example, for items that aren't offically published like some dissertations, there may not be a call number associated with it or an ISBN.	Evaluate(Check) Create (generate) Create(generate)
S20 2/20/08 3:42 PM (9) That's a really good idea. Thanks for mentioning it. :-)	
S10 2/20/08 7:52 PM (10) To join in the discussion... Our system uses barcodes, and it works very well. Each copy of the same work has the same call number, but a different barcode.	Understand(explain)
S1 2/18/08 10:27 PM (11) S14: You're a scholar! I'm really digging the way you created the supertype of person and seperated out address. I think that separating out the address is very useful in that it makes the address itself a searchable entity by which people can be idetified in an addition to their names and employee ID #'s. Creating address as an entity eliminates the redundancy needed for normalization. Nice work! I did something similiar in my diagram, but it is weak and tepid compared to your visio special.	Understand(exemplify) Apply(Implement)

I tried to make it clear in my diagram that every person was part of the county system and that there were lots of transactions going on. Not just loan transactions for members, but employee transactions as well. For this reason, I created two separate entities entitled employee transactions (to cover things like pay, leave, sick leave, etc) and member transactions (to cover borrowing, returning, fine paying, etc..).	Analyze(organize)
I also tried to make clear that employees can also be members so if they take out a book or cd we have a method of tracking them just like any other member. Maybe I got too far down into the weeds, I don't know. Your diagram is awesome and it helped me sort out some issues I was having. Again, nice work! Very Respectfully, S1	Create(generate)
S22 2/20/08 6:02 PM S14, I didn't do the library model, but I have to say your schema came out beautiful. It puts mine to shame. You may convert me over to Visio. (when I have time to learn it!) It looks like you spent many hours on it. Great job again! S22	

8.10.5 Week 6 -Question 1-Thread 3 (Waters and Gasson)

Normalized Library model and implementation S20 2/15/08 1:30 PM　　　[1]
　　RE: Normalized Library model and implementation S2 2/16/08 3:45 PM　　[2[
　　RE: Normalized Library model and implementation S7 2/17/08 11:34 PM　[3]
　　RE: Normalized Library model and implementation S3 2/18/08 2:47 PM　　[4]
　　RE: Normalized Library model and implementation S16 2/18/08 5:21 PM　[5]
　　RE: Normalized Library model and implementation S13 2/18/08 9:58 PM　[6]
　　　　RE: Normalized Library model and implementation S20 2/19/08 9:26 AM　[7]
　　RE: Normalized Library model and implementation S1 2/18/08 10:13 PM　[8]
　　　　RE: Normalized Library model and implementation S20 2/19/08 9:46 AM　[9]
　　RE: Normalized Library model and implementation S19 2/19/08 9:55 PM　[10]
　　RE: Normalized Library model and implementation S22 2/20/08 5:57 PM　[11]

Message	Behavior Type
S20 2/15/08 1:30 PM (1) Hi everyone - Well, hmm, I didn't do anything that S21 did! I wonder if I have a lot more work in front of me?!	
I used the steps in the text to normalize my table (p. 299-306). Then, I attempted to add integrity to the data by addressing the following (p. 535-536): 1. all entities have at least 1 priS9 key 2. reducing the possibility of referential integrity by adding deletion rules to my ERD I was especially concerned with the integrity issues surrounding LOAN TRANSACTION. I wanted to ensure that no RESOURCE or MEMBER would be deleted if there was an existed LOAN TRANSACTION in the system. Once a resource is returned, the LOAN TRANSACTION record would be deleted automatically from the system, Thus, allowing for MEMBER or RESOURCE to be deleted if necessary.	Contributor Complicator
I wasn't sure how to address the domain integrity issue other than recognize that the field values must be defined and controlled. For example, the call numbers must be legal values in the Dewey Decimal system, and all member ID numbers must be 10 digits long (integer). It is difficult to define some of these without the system users and owners.	

Additionally, I would create the following tables, depending on the information needs of the person requesting the table(s):	Facilitator
1. a table for each entity 2. the subtypes MANAGER and STAFF could be collapsed into one table with the supertype EMPLOYEE. 3. the subtypes MANAGER and STAFF could have individual tables with the EMPLOYEE attributes being duplicated in each. 4. the subtypes BOOK, CD, and PUBLISHER could have individual tables with the RESOURCE attributes being duplicated in each (with the exception of the attribute RESOURCE TYPE - that'd be rather redundant!).	Complicator
Look forward to seeing what everyone else did this week! Thanks, S20	
S2 2/16/08 3:45 PM (2) S20, I learned a lot just from looking at your normalized ERD. Great job!	Vicarious-Acknowledger
I totally missed the notations for referential integrity in mine.	Vicarious-Acknowledger
And you explained your process so well . . . helps to see how I could have organized mine better. Thanks!! S2	
S7 2/17/08 11:34 PM (3) Thanks for explaining the domain integrity issues.	Vicarious-Acknowledger
I makes sense that the numbers must be legal values in the Dewey Decimal system and that member numbers must be of a certain lenght.	Contributor
I had the hardest time understanding what was meant by "integrity isuues" Thanks, S7	Vicarious-Acknowledger
S3 2/18/08 2:47 PM (4) Great job again S20.	Vicarious-Acknowledger
I was also not too sure what to do for the integrity issues, but your ERD and explanation are good examples.	
S16 2/18/08 5:21 PM (5) Your explanation of integrity issues, and showing them on your ERD was very helpful.	Vicarious-Acknowledger
I'm still not entirely sure I understand the code and have implemented it properly, but at least I recognize that that is the way to deal with integrity issues.	
S13 2/18/08 9:58 PM (6) Your ERD is such a good example to follow. These assignments have been tricky for me so you have provided great guidelines.	Vicarious-Acknowledger
I was a little unsure about the domain integrity and I didn't even think of the member ID #!	
How do you think other fields with integers like phone numbers or addresses would be handled? Would they even be considered for domain integrity?	facilitator
S20 2/19/08 9:26 AM (7) I figure that attributes like addresses that have both numbers and letters would be "text" rather than "integer." I'd probably have the street and zip code as required fields for members, as usually a person has to prove their residency to get a library card. But I would have phone number as not required - I'd probably recommend it so we could call them about reserves, etc.	facilitator
Something I tried to keep in mind about the member information is issues of privacy, so I'd want to keep as little as possible on file about each member.	Contributor
I think every attribute needs to be evaluated in regards to domain integrity. Phone number would probably be... well, maybe two fields, area code and number? And area code would be integer, 3 digits, and number would be integer, 7 digits (no dashes).	Facilitator

Of course, if the library decides to provide online services, they'd have to keep the phone number field optional, because countries outside the US have different phone number formats (something that is REALLY Annoying to discover when you're shopping online at US businesses with a UK phone number!!!). Does that answer your question??? S20	Complicator
S1 2/18/08 10:13 PM (8) Hello S20: Very nicely done!	Vicarious-Acknowledger
I wasn't sure how to use the publisher information in my diagram so I simply included it as a descriptive entity under books.	Contributor
Your diagram does an excellant job of clearly describing the relationship within and between the county library system.	V-A
The one thing that I don't understand is that you list "address" as a descriptive element under several different entities such as employee, branch library, and members. I wasn't sure whether this was considered redundent or not.	Complicator
It makes sense to me that if it is used under each entity and is specific to that entity than it is o.k.	Contributor
Your use of the employee supertype that included the address for both the managers and the staff seems to take care of the reducency issues.	
In my diagram, I made address it's own entity because I figured that some employees would also be members, or at least conducting loan transactions, so I figured that making address its' own entity would allow all people within the county system to be identified by their address.	V-A Complicator
All of this is just so exciting and it's really neat to see everyones ideas. Nice work! Very Respectfully, S1	
S20 2/19/08 9:46 AM (9) Thank you! :-) I deliberately kept MEMBER and EMPLOYEE separate. My reasoning was that I did not want any confusion regarding the information needed for each type of person. For instance, I did not want to imply that we needed the member's SSN - breach of privacy! Also, an employee requires a full address and a phone number, but a member's phone number is not required. I think that those little differences would make it difficult to put them all together in a PERSON supertype.	Facilitator
If an employee is also a member, then I would put in a separate member record for that person. It's probably a little redundant, but I just wouldn't want those two types of records mixing due to privacy issues.	
I considered using address as a PK, but then I asked myself, "what if there are two people in the same household with separate membership?" For example, my husband and I each have our own library cards, but we share an address. Our records would not be unique in the system. Perhaps if it was paired with NAME, then it would be unique. Or, if there was only one membership per address, and everyone in that household shared it - you'd have to have attributes for multiple names on that entity.	Complicator
ADDRESS is redundant in my ERD. But I ask for different information under ADDRESS, so I think it's alright. I didn't think to organize it using ADDRESS as its own entity, but I don't think that'd work in my ERD like it does in yours.	Complicator
I think the fact that these attributes, like ADDRESS, PHONE, etc. that repeat would be treated differently - null v. non-null, different required information - makes it necessary for them to be kept separate. S20	Closer

S19 2/19/08 9:55 PM (10) S20, I found it helpful to see your comments about how you changed your ERD and why. It was also very helpful to see how you listed the domain integrity solutions for each entity. S19	V-A
S22 2/20/08 5:57 PM S20, Even though I didn't do the Library model I found your insights and detailed work very helpful in aiding my understanding of this assignment. Thanks for a very nicely done normalization model! Kudos to you! S22	Vicarious-Acknowledger

8.10.6 Week 6 -Question 1-Thread 3 (Anderson & Krathwohl)

Normalized Library model and implementation S20 2/15/08 1:30 PM   [1]
    RE: Normalized Library model and implementation S2 2/16/08 3:45 PM   [2[
    RE: Normalized Library model and implementation S7 2/17/08 11:34 PM   [3]
    RE: Normalized Library model and implementation S3 2/18/08 2:47 PM   [4]
    RE: Normalized Library model and implementation S16 2/18/08 5:21 PM   [5]
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        RE: Normalized Library model and implementation S20 2/19/08 9:26 AM   [7]
    RE: Normalized Library model and implementation S1 2/18/08 10:13 PM   [8]
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    RE: Normalized Library model and implementation S19 2/19/08 9:55 PM   [10]
    RE: Normalized Library model and implementation S22 2/20/08 5:57 PM   [11]

Message	Content Analysis of message Anderson and Krathwohl
S20 2/15/08 1:30 PM [1] Hi everyone - Well, hmm, I didn't do anything that S21 did! I wonder if I have a lot more work in front of me?! I used the steps in the text to normalize my table (p. 299-306). Then, I attempted to add integrity to the data by addressing the following (p. 535-536): 1. all entities have at least 1 primary key 2. reducing the possibility of referential integrity by adding deletion rules to my ERD I was especially concerned with the integrity issues surrounding LOAN TRANSACTION. I wanted to ensure that no RESOURCE or MEMBER would be deleted if there was an existed LOAN TRANSACTION in the system.	Apply(implement)
Once a resource is returned, the LOAN TRANSACTION record would be deleted automatically from the system, Thus, allowing for MEMBER or RESOURCE to be deleted if necessary.	Evaluate(checking)
I wasn't sure how to address the domain integrity issue other than recognize that the field values must be defined and controlled. For example, the call numbers must be legal values in the Dewey Decimal system, and all member ID numbers must be 10 digits long (integer). It is difficult to define some of these without the system users and owners.	Create(generate)
Additionally, I would create the following tables, depending on the information needs of the person requesting the table(s): 1. a table for each entity 2. the subtypes MANAGER and STAFF could be collapsed into one table with the supertype EMPLOYEE. 3. the subtypes MANAGER and STAFF could have individual tables with the EMPLOYEE attributes being duplicated in each.	Understand (explain)

4. the subtypes BOOK, CD, and PUBLISHER could have individual tables with the RESOURCE attributes being duplicated in each (with the exception of the attribute RESOURCE TYPE - that'd be rather redundant!). Look forward to seeing what everyone else did this week! Thanks, S20	Apply (implement)
S2 2/16/08 3:45 PM [2] S20, I learned a lot just from looking at your normalized ERD. Great job! I totally missed the notations for referential integrity in mine. And you explained your process so well . . . helps to see how I could have organized mine better. Thanks!! S2	Evaluate(checking)
S7 2/17/08 11:34 PM [3] Thanks for explaining the domain integrity issues. I makes sense that the numbers must be legal values in the Dewey Decimal system and that member numbers must be of a certain lenght. I had the hardest time understanding what was meant by "integrity isuues" Thanks, S7	Evaluate(checking)
S3 2/18/08 2:47 PM [4] Great job again S20. I was also not too sure what to do for the integrity issues, but your ERD and explanation are good examples.	
S16 2/18/08 5:21 PM [5] Your explanation of integrity issues, and showing them on your ERD was very helpful. I'm still not entirely sure I understand the code and have implemented it properly, but at least I recognize that that is the way to deal with integrity issues.	
S13 2/18/08 9:58 PM Your ERD is such a good example to follow. These assignments have been tricky for me so you have provided great guidelines. I was a little unsure about the domain integrity and I didn't even think of the member ID #! How do you think other fields with integers like phone numbers or addresses would be handled? Would they even be considered for domain integrity?	Evaluate(checking) Evaluate (critique)
S20 2/19/08 9:26 AM [70 I figure that attributes like addresses that have both numbers and letters would be "text" rather than "integer." I'd probably have the street and zip code as required fields for members, as usually a person has to prove their residency to get a library card. But I would have phone number as not required - I'd probably recommend it so we could call them about reserves, etc. Something I tried to keep in mind about the member information is issues of privacy, so I'd want to keep as little as possible on file about each member. I think every attribute needs to be evaluated in regards to domain integrity. Phone number would probably be... well, maybe two fields, area code and number? And area code would be integer, 3 digits, and number would be integer, 7 digits (no dashes). Of course, if the library decides to provide online services, they'd have to keep the phone number field optional, because countries outside the US have different phone number formats (something that is REALLY Annoying to discover when you're shopping online at US businesses with a UK phone number!!!). Does that answer your question??? S20	Understand(Compare) Evaluate(critique) Analyze(differentiate) Understand(Explain)
S1 2/18/08 10:13 PM [8]	

Hello S20: Very nicely done! I wasn't sure how to use the publisher information in my diagram so I simply included it as a descriptive entity under books.	
Your diagram does an excellant job of clearly describing the relationship within and between the county library system.	Understand(explain)
The one thing that I don't understand is that you list "address" as a descriptive element under several different entities such as employee, branch library, and members. I wasn't sure whether this was considered redundent or not.	Evaluate(critique)
It makes sense to me that if it is used under each entity and is specific to that entity than it is o.k.	Evaluate(checking)
Your use of the employee supertype that included the address for both the managers and the staff seems to take care of the redudency issues.	Evaluate(critique)
In my diagram, I made address it's own entity because I figured that some employees would also be members, or at least conducting loan transactions, so I figured that making address its' own entity would allow all people within the county system to be identified by their address.	Understand(Compare)
All of this is just so exciting and it's really neat to see everyones ideas. Nice work! Very Respectfully, S1	
S20 2/19/08 9:46 AM [9] Thank you! :-) I deliberately kept MEMBER and EMPLOYEE separate. My reasoning was that I did not want any confusion regarding the information needed for each type of person. For instance, I did not want to imply that we needed the member's SSN - breach of privacy! Also, an employee requires a full address and a phone number, but a member's phone number is not required. I think that those little differences would make it difficult to put them all together in a PERSON supertype.	Understand(explain)
If an employee is also a member, then I would put in a separate member record for that person. It's probably a little redundant, but I just wouldn't want those two types of records mixing due to privacy issues.	
I considered using address as a PK, but then I asked myself, "what if there are two people in the same household with separate membership?" For example, my husband and I each have our own library cards, but we share an address. Our records would not be unique in the system. Perhaps if it was paired with NAME, then it would be unique. Or, if there was only one membership per address, and everyone in that household shared it - you'd have to have attributes for multiple names on that entity. ADDRESS is redundant in my ERD. But I ask for different information under ADDRESS, so I think it's alright. I didn't think to organize it using ADDRESS as its own entity, but I don't think that'd work in my ERD like it does in yours.	Understand(Explain)

Evaluate(critique) |
I think the fact that these attributes, like ADDRESS, PHONE, etc. that repeat would be treated differently - null v. non-null, different required information - makes it necessary for them to be kept separate. S20	Evaluate(critique)
S19 2/19/08 9:55 PM S20, I found it helpful to see your comments about how you changed your ERD and why. It was also very helpful to see how you listed the domain integrity solutions for each entity. S19	
S22 2/20/08 5:57 PM S20, Even though I didn't do the Library model I found your insights and detailed work very helpful in aiding my understanding of this assignment. Thanks for a very nicely done normalization model! Kudos to you! S22	

8.10.7 Week 9 -Question 1-Thread 9 (Waters and Gasson)

Message	Behavior Type
S20 3/6/08 5:24 PM (1) Hi everyone - According to Whitten and Bentley, cultural or political feasibility "is a measure of how people feel about a solution and how well it will be accepted in a given organizational climate" (p. 417). It especially focuses on how the end users will react to the new system. In a school library, this balance can be difficult because teacher wants may not necessarily meet student wants, and neither of these groups' reactions to a new system may match the acceptance or resistance of the school district, the local community, or the governmental bodies that may dictate many key goals of the new system.	Complicator
In addition to cultural feasibility, I suggest an additional feasibility test for school libraries: educational feasibility. This feasibility test would ascertain whether a project would improve or support students' academic success. This feasibility assessment would be crucial in a school library, as a school's bottom line is not to make money but to educate young people. Economic feasibility is important to the point of maintaining the institution and promoting student learning - a public school is not out to make a profit.	Facilitator
For example, a school library system can test project feasibility in a number of ways. First, the bottom line: student success. Testing students and surveying them in regards to their researching skills and their confidence in using library resources could show the need for improved library services.	Contributor
School district, administrative, and faculty support are also important. Assessing the perceptions of these groups in regard to the school library and educating them on the library's possibilities for student educational advancement are critical: without approval and support from these groups, the project would be nearly impossible to continue. Even if the new system was implemented, a lack of enthusiasm from the faculty could mean that teachers would not use the new system to enrich their students' curricula.	Facilitator
Public schools have state standards that must be met. A project may be required to go forward regardless of any other feasibility assessment based on the current political atmosphere and new governmental standards for schools.	
Lastly, many feasibility tests are often intertwined. For example, a school library project could have a smaller budget and more technological options with community support. Discounts on technical equipment from local businesses and parent volunteers for assisting with project implementation and evaluation could considerably improve the economic feasibility of the project.	Complicator
	Facilitator
Therefore, in this instance, economic and technical feasibility would be dependent upon cultural feasibility (i.e., positive community feelings toward and support of the project). Thanks, S20	Closer
S7 3/7/08 1:33 PM (2) I like the emphasis on how the different kinds of feasibility tests are often intertwined. I	Facilitator

agree with you 100%. Most often I think it boils down to economic feasibility, don't you think? S7	
S20 3/8/08 11:48 AM (3) S7 - Yes, I agree that economic feasibility is very important. Without the money, it won't get done. And, if we don't have the money to maintain the new system, the school would go bankrupt and everyone would lose out. I also think that there is a lot of grant money out there and foundations that would be more than willing to support a school library's improvement endeavors, as long as you have a grantwriter (probably the librarian) who knows how to write grants. I think it's not as big of an issue in a non-profit situation as it is in the business world because we're not trying to make money from the system, and we can get money from outside sources, if that makes sense. A lot of it rides on successful grantwriting, though (and that's a LOT!). Thanks,	Facilitator Complicator

S10 3/7/08 1:37 PM (4)
S20,
  I think you raise a good point about "educational feasibility." I think this is comparable to Operational Feasibility-usability; however, in addition to being easy to use or accessible for students the system must also provide them with information they need to support the curriculum.
 	
  I worked in a high school library for a while, and now I work in a public library in youth services. I often see how quickly students reject complicated databases (ease of use) or reject the databases because it's not as easy to find the specific information needed for their project. For example, if they need a timeline of things that happened in the 1920s it will be much easier, though not necessarily better, to go to Google and type in "1920s timeline" then go into one of the databases, search through listings and piece together a timeline.
 	
  The databases that are successful must be both easy to use and provide curriculum relevant information. For instance CultureGrams is perfect for school reports on different countries and almost always provides everything the students need including maps, flags, symbols, famous people from the county, recipes, clothing, customs, etc..
 	
  Anyway, it's the same with the system. At the high school library in which I worked, the OPAC system was fairly archaic and difficult to search compared to the public library systems in the area. A lot of the subject headings were out of date with modern curriculum terminology. So, even though the library had relevant, current holdings, many students and teachers rejected using the h.s. library altogether because it was easier to use the local public libraries' updated systems with current curriculum terminology and search features. S10
	Facilitator
	
	Contributor
	
	Contributor
	
	Contributor

S20 3/8/08 11:51 AM (5) S10 - You bring up some good points about the new system's ease-of-use. That'd probably come up a lot in regards to last week's make v. buy discussion - determining which product would be best to lease/buy for the students but would still allow the librarian/faculty to maintain the system as well. S20	Facilitator
S17 3/7/08 4:58 PM (6) S20, Good job for pointing out the issue of conflict when it comes to feasibility analysis in a school library project. In fact this is applicable to other situations as well. In nearly all situations feasibility analysis must consider the needs, opinions and culture of the peoeple the project is intended to serve. Without this analysis, the project could end up not being patronized. One way to go about this is to have each of the facets of the society represented in the feasibility team. That way everybody's opinion would be considered.	VA Facilitator Closer

However, care must also be taken not to allow an all inclusive team derail the project. I am talking about a situation where by too many suggestions are considered to the extent that the project is either slowed significantly or is put on hold.	Complicator
There will always be conflicts as long as the project is intended to server a multi-culture society. It is usually the skill of the feasibilty team that will determine the success or failure of the feasibility analysis and ultimately the sucess or failure of the project. thanks, S17	Closer
S20 3/8/08 11:44 AM (7) Hi S17,	
In regards to your comment about a "feasibility team"...	
For my xxxxx project I wrote to get money for a project to automate a small school library in Wyoming (it was part of a technological improvement project through the whole school).	Contributor
One part of the project involved forming a committee that was strictly responsible for the school library's automation, and was made up of the library director, one teacher from each grade group (K-5, 6-8, 9-12), and one parent.	Contributor
My community was very supportive of the project and nearly all teachers, administration, and school board personnel were 100% behind the library's improvements. Can you tell that my project was a fictional one? ;-) - S20	Contributor
S3 3/7/08 11:59 PM (8) S20...	
Educational feasibility is certainly crucial to a school library.	V-A
I read an newspaper editorial that stated 40% of public schools in Pennsylvania do not have a library! That is astounding.	
In these schools, an educational feasibility test would most definitely show that a system and collection would increase test scores, student success and literacy skills. Because, as you stated, a school measures success based on the education of its "users," not profitability. S3	Facilitator
S20 3/8/08 11:54 AM (9) Thanks for the article (S3) - that is disturbing! I learned all of my basic library/researching skills in elementary school. I wonder what the percentages are like in other states? S20	Facilitator
S24 3/8/08 7:38 PM (10) S20	
I agree that the feasibility tests are often intertwined. It would be hard to reach any conclusions in one area without having researched the other.	V-A
Cultural Feasibilty, especially, effects economic and technological feasibility. Very well thought out post!	Facilitator
S11 3/9/08 4:01 PM (11) S20.	
I think you've written an extremely insightful post. I really like the idea of an educational feasibility test.	V-A
While it could be said that this would be covered under a broader term such as operational feasibility, I think that creating feasibility tests that are "organizationally specific" is a great idea. The creation of an educational feasibility test could help incorporate issues that are more specific, but,	Contributor
perhaps, one of the greatest benefits would be when a report was generated. The use of an organizationally specific term could actually be persuasive in a climate such as school library in procuring funds. S11	Contributor

8.10.8 Week 9 -Question 1-Thread 9 (Anderson & Krathwohl)

Message	Content Analysis of message Anderson and Krathwohl
S20 3/6/08 5:24 PM Hi everyone -	
According to Whitten and Bentley, cultural or political feasibility "is a measure of how people feel about a solution and how well it will be accepted in a given organizational climate" (p. 417). It especially focuses on how the end users will react to the new system. In a school library, this balance can be difficult because teacher wants may not necessarily meet student wants, and neither of these groups' reactions to a new system may match the acceptance or resistance of the school district, the local community, or the governmental bodies that may dictate many key goals of the new system.	Understand(explain)
In addition to cultural feasibility, I suggest an additional feasibility test for school libraries: educational feasibility. This feasibility test would ascertain whether a project would improve or support students' academic success. This feasibility assessment would be crucial in a school library, as a school's bottom line is not to make money but to educate young people. Economic feasibility is important to the point of maintaining the institution and promoting student learning - a public school is not out to make a profit.	Create(plan)
For example, a school library system can test project feasibility in a number of ways. First, the bottom line: student success. Testing students and surveying them in regards to their researching skills and their confidence in using library resources could show the need for improved library services.	Understand(exemplify)
School district, administrative, and faculty support are also important. Assessing the perceptions of these groups in regard to the school library and educating them on the library's possibilities for student educational advancement are critical: without approval and support from these groups, the project would be nearly impossible to continue. Even if the new system was implemented, a lack of enthusiasm from the faculty could mean that teachers would not use the new system to enrich their students' curricula.	
Public schools have state standards that must be met. A project may be required to go forward regardless of any other feasibility assessment based on the current political atmosphere and new governmental standards for schools.	Understand(Explain)
Lastly, many feasibility tests are often intertwined. For example, a school library project could have a smaller budget and more technological options with community support. Discounts on technical equipment from local businesses and parent volunteers for assisting with project implementation and evaluation could considerably improve the economic feasibility of the project. Therefore, in this instance, economic and technical feasibility would be dependent upon cultural feasibility (i.e., positive community feelings toward and support of the project). Thanks, S20	Understand(explain)

S7 3/7/08 1:33 PM I like the emphasis on how the different kinds of feasibility tests are often intertwined. I agree with you 100%. Most often I think it boils down to economic feasibility, don't you think? S7	Understand(Compare)
S20 3/8/08 11:48 AM S7 - Yes, I agree that economic feasibility is very important. Without the money, it won't get done. And, if we don't have the money to maintain the new system, the school would go bankrupt and everyone would lose out. I also think that there is a lot of grant money out there and foundations that would be more than willing to support a school library's improvement endeavors, as long as you have a grantwriter (probably the librarian) who knows how to write grants.	Analyze(Differentiate)
I think it's not as big of an issue in a non-profit situation as it is in the business world because we're not trying to make money from the system, and we can get money from outside sources, if that makes sense. A lot of it rides on successful grantwriting, though (and that's a LOT!). Thanks,	Evaluate(critique)
S10 3/7/08 1:37 PM S20, I think you raise a good point about "educational feasibility." I think this is comparable to Operational Feasibility-usability; however, in addition to being easy to use or accessible for students the system must also provide them with information they need to support the curriculum.	Understand(compare)
I worked in a high school library for a while, and now I work in a public library in youth services. I often see how quickly students reject complicated databases (ease of use) or reject the databases because it's not as easy to find the specific information needed for their project. For example, if they need a timeline of things that happened in the 1920s it will be much easier, though not necessarily better, to go to Google and type in "1920s timeline" then go into one of the databases, search through listings and piece together a timeline.	Understand(exemplify)
The databases that are successful must be both easy to use and provide curriculum relevant information. For instance CultureGrams is perfect for school reports on different countries and almost always provides everything the students need including maps, flags, symbols, famous people from the county, recipes, clothing, customs, etc..	Evaluate(critique)
Anyway, it's the same with the system. At the high school library in which I worked, the OPAC system was fairly archaic and difficult to search compared to the public library systems in the area. A lot of the subject headings were out of date with modern curriculum terminology. So, even though the library had relevant, current holdings, many students and teachers rejected using the h.s. library altogether because it was easier to use the local public libraries' updated systems with current curriculum terminology and search features. S10	Evaluate(critique)
S20 3/8/08 11:51 AM S10 - You bring up some good points about the new system's ease-of-use. That'd probably come up a lot in regards to last week's make v. buy discussion - determining which product would be best to lease/buy for the students but would still allow the librarian/faculty to maintain the system as well. S20	Understand(summarize)
S17 3/7/08 4:58 PM S20, Good job for pointing out the issue of conflict when it comes to feasibility analysis in a school library project.	Evaluate(critique)
In fact this is applicable to other situations as well. In nearly all situations feasibility analysis must consider the needs, opinions and culture of the peoeple the project is intended to serve. Without this analysis, the project could end up not being patronized.	Understand(compare)

One way to go about this is to have each of the facets of the society represented in the feasibility team. That way everybody's opinion would be considered.	Create(plan)
However, care must also be taken not to allow an all inclusive team derail the project. I am talking about a situation where by too many suggestions are considered to the extent that the project is either slowed significantly or is put on hold.	Evaluate(critique)
There will always be conflicts as long as the project is intended to server a multi-culture society. It is usually the skill of the feasibility team that will determine the success or failure of the feasibility analysis and ultimately the sucess or failure of the project. thanks, S17	Create(generate)
S20 3/8/08 11:44 AM Hi S17, In regards to your comment about a "feasibility team"... For my xxxxx project I wrote to get money for a project to automate a small school library in Wyoming (it was part of a technological improvement project through the whole school).	Understand(exemplify)
One part of the project involved forming a committee that was strictly responsible for the school library's automation, and was made up of the library director, one teacher from each grade group (K-5, 6-8, 9-12), and one parent. My community was very supportive of the project and nearly all teachers, administration, and school board personnel were 100% behind the library's improvements. Can you tell that my project was a fictional one? ;-) - S20	Analyze(organize)
S3 3/7/08 11:59 PM S20... Educational feasibility is certainly crucial to a school library. I read an newspaper editorial that stated 40% of public schools in Pennsylvania do not have a library! That is astounding.	Remember (recall)
In these schools, an educational feasibility test would most definitely show that a system and collection would increase test scores, student success and literacy skills. Because, as you stated, a school measures success based on the education of its "users," not profitability. S3	Analyze(Differentiate)
S20 3/8/08 11:54 AM Thanks for the article (S3) - that is disturbing! I learned all of my basic library/researching skills in elementary school. I wonder what the percentages are like in other states? S20	Remember(recall)
S24 3/8/08 7:38 PM S20 I agree that the feasibility tests are often intertwined. It would be hard to reach any conclusions in one area without having researched the other.	Understand(Summarize)
Cultural Feasibilty, especially, effects economic and technological feasibility. Very well thought out post!	Analyze(organize)
S11 3/9/08 4:01 PM S20. I think you've written an extremely insightful post. I really like the idea of an educational feasibility test. While it could be said that this would be covered under a broader term such as operational feasibility, I think that creating feasibility tests that are "organizationally specific" is a great idea. The creation of an educational feasibility test could help incorporate issues that are more specific, but, perhaps, one of the greatest benefits would be when a report was generated. The use of	Evaluate(critique)

an organizationally specific term could actually be persuasive in a climate such as school library in procuring funds. S11	Create(generate)

8.10.9 Week 3 -Question 2-Thread 12 (Waters and Gasson)

Visual OPAC for children S15 1/24/08 7:54 PM   [1]
    RE: Visual OPAC for children S1 1/24/08 8:08 PM   [2]
        RE: Visual OPAC for children S19 1/26/08 11:27 PM   [3]
    RE: Visual OPAC for children S11 1/25/08 3:20 PM   [4]
        RE: Visual OPAC for children S13 1/27/08 10:25 PM   [5]
    RE: Visual OPAC for children S10 1/25/08 7:29 PM   [6]
        RE: Visual OPAC for children S2 1/25/08 7:45 PM   [7]
            RE: Visual OPAC for children S10 1/30/08 3:23 PM [8]
        RE: Visual OPAC for children S15 1/26/08 2:32 PM   [9]
        RE: Visual OPAC for children S7 1/26/08 4:22 PM   [10]
    RE: Visual OPAC for children S5 1/26/08 1:44 PM   [11]

Message	Behavior Type
S15 1/24/08 7:54 PM (1) Goals for this systems development project include setting up a visual OPAC for children to easily understand, browse and search the library's catalog. Upon completion these visual OPAC's will be set up in various libraries in Berkshire County.	Contributor
Objectives An individual will be hired to work with the children's librarian and systems analyst to develop the visual OPAC. This individual's responsibilities will include designing, testing, and installing the visual OPAC at the designated libraries. In addition, this individual will need to establish a link from the library's web page to a kid page containing the visual OPAC. Reviewing studies that have previously been done on children's OPAC use will be very useful for this project.	Contributor
Scope The systems analyst will hire and guide the proper individual to develop and install this visual OPAC. This visual OPAC will include icons and simple terminology to increase success of children's searching and browsing of a children's catalog. The systems analyst will stress the importance that the final product should be easily understood by users of all ages, and utilize clear pictures. Ideally the system should be set up so that a child could navigate the system with only minimal adult or librarian guidance. Finally, the systems analyst will make certain that the project is completed in a timely fashion and within its budget. Designing, testing, and implementing this program should take no longer than six months and the cost will remain under $1,000.	Contributor
A great model for this task may include the Denver Public Library and the Kid page they have established there. http://kids.denverlibrary.org/	contributor
S1 1/24/08 8:08 PM Hello S15: Terrific idea. No doubt the development of such a system will make children more interested in accessing the materials available to them in the library.	Facilitator
I noticed that one of your objectives is to hire a person to work with the children's librarian and shystem analyst in order to develop and install the visual OPAC.	Facilitator
I wonder whether it might be of value to have a joint requirements planninng meeting that would include children's librarians from across the county. In your case scenario, these visual OPACs will be installed across the county and it might be a good idea to	

have buy in from the other librarians so that they feel included in the project. Another possibility is to have some kind of "kick off" celebration (very small of course) and invite the other librarians from across the county so that they all feel like they are part of the project.	Facilitator
I think "buy in" is important, as it is often human nature to poke holes in a finished product if it is simply presented to you but people will be more accepting if they feel as if they had a hand in the design.	Contributor
Good luck with your project and have a terrific weekend. Very Respectfully, S1	
S19 1/26/08 11:27 PM I like the idea of incorporating current users of visual OPAC's into the team structure.	Vicarious-acknowledger
You might go a step farther and invite your inspiration children OPAC designer from the Denver Public Library.	Contributor
S11 1/25/08 3:20 PM S15, I think this is a great idea as well. The first thing that came to mind while I was reading your post was my daughter and her 'First Reader' books.	V-A
For anyone who is not familiar with these books, they are essentially books that include pictures embedded within the paragraphs to stimulate recognition; the actual word is also printed under the picture.	Contributor
I think to how the visual aid has actuality stimulated her interest in reading-she is still only 2 years old, but loves to "read" the books to us. I would think that children would be very welcoming of a visual interface and would want to use it as opposed to have to use it.	Contributor
Encouraging children to use this interface at an early age seems to only increase the chances of people becoming more enabled as users and becoming better searchers.	Facilitator
S13 1/27/08 10:25 PM My library has something similar on a very basic level. Its concept is good (pictures used for words) but it does not get used very often. It's in an almost hidden area far away from the most visited areas of the children's section.	V-A
It also requires a large amount of adult help. It's almost like a facade of a children's OPAC. It looks like a child could use it, but they probably cannot. I would be very interested in what a system like this would deliver. How child-friendly would it be?	Facilitator
S10 1/25/08 7:29 PM Hi S15, S1 and S11,	
S15, this is a great idea, and you all make some good points.	Vicarious-Acknowledger
I like S1's thoughts about librarians "buying in", and how it can help to have them involved as stakeholders.	V-A
Since our library system's major web/catalog redesign, I've been on the committee, composed of children's staff from various branches system wide, for Kidspace. It's the children friendly webpage of our Opac. This has really just been a webpage, which provides great links to sites for fun, learning, homework, etc.. but the catalog is fundamentally the same, it doesn't provide a children friendly catalog interface. The new webdesign software allows those of us on the committee to change certain features of the website, post new documents, surveys, etc.. but the catalog is a seperate system that we can't really manipulate well.	Contributor
We're currently working on an actual interface that would do some of the things S11 mentions, primarily provide a more visual interface.	contributor
A few months ago we had a presenter from Grolier in presenting some of the features of their GrolierKids interface. One of the things she mentioned was that they've found through research that kids prefer to search through icons, so the page is layed out to	

indicate various areas, such as Animals, Lands and Peoples, etc..	Contributor
It's still possible to do more of a tradtional search, but the icons make it more intuitive for kids. (I was reminded of this when S11 related about the rebus readers.)	
Anyway, the Grolier rep mentioned how they would actually bring kids in to test the system after each iteration which was incredibly valuable, because even with the research studies, and what they "knew" about how kids would use the system, each test with actual kids revealed some new insight, or design flaw, or happy accident, etc..	Contributor
S15, I wonder if you should include kid focus groups/ feedback in your project scope? If nothing else, it would also get the kids to "buy in". I witness kids teaching each other how to get to different internet games, change fonts in word, etc.. constantly. Imagine if you had at least one kid from each branch come and "test" the system and give feedback, they'd feel part of the process, valued, and they'd want to show other kids, so it would help spread the word.	Contributor
	Facilitator
It's the same concept that S1 mentioned about the staff "buying in." Inclusion in the process helps the staff and kids feel like they're a part of the system, and they're less likely to be negative about the change, AND they'll return to their respective branches and show others all the neat tricks, and how to find things.	Closer
S2 1/25/08 7:45 PM S10 Kidspace is awesome! It's so appealing . . . and at a quick glance contains some great information! Thanks for sharing this with us.	Vicarious-Acknowledger
S10 1/30/08 3:23 PM Thanks S2. Hopefully, it will get even better!	
S15 1/26/08 2:32 PM I also think kid testing would be an important part of this process.	Vicarious-Acknowledger
I work with children, and I am always amazed by the types of things that they are actually drawn to or interested in.	Contributor
At my job we have many different works(toys) that are put out for them and some that I think will be a big hit may end up completely ignored, while others are a huge hit.	Contributor
Having children test the visual OPAC would be the best way to determine what works for them and what doesn't.	Contributor
S7 1/26/08 4:22 PM Great idea S2! This whole visual thing is super. Just think about how unforgiving OPACS are with misspelling words and how frustrating that can be to kids.	V-A
A visual platform would be so much more useful and lead to greater success for children in navigating the library catalogs. S10, I think your idea about involving the children through a focus group is a great one and I believe it will make the project more successful in the end. S7	Contributor
	V_A
S5 1/26/08 1:44 PM I think another good way to find information on this topic would be to contact elementary school libraries and find out what kinds of catalog tools they use for easy and fun access for children.	Facilitator

8.10.10 Week 3 -Question 2-Thread 12 (Anderson & Krathwohl)

Message	Content Analysis of message Anderson and Krathwohl
S15 1/24/08 7:54 PM Goals for this systems development project include setting up a visual OPAC for children to easily understand, browse and search the library's catalog. Upon completion these visual OPAC's will be set up in various libraries in Berkshire County.	Understand(exemplify)
Objectives An individual will be hired to work with the children's librarian and systems analyst to develop the visual OPAC. This individual's responsibilities will include designing, testing, and installing the visual OPAC at the designated libraries. In addition, this individual will need to establish a link from the library's web page to a kid page containing the visual OPAC. Reviewing studies that have previously been done on children's OPAC use will be very useful for this project.	Apply(implement)
Scope The systems analyst will hire and guide the proper individual to develop and install this visual OPAC. This visual OPAC will include icons and simple terminology to increase success of children's searching and browsing of a children's catalog. The systems analyst will stress the importance that the final product should be easily understood by users of all ages, and utilize clear pictures. Ideally the system should be set up so that a child could navigate the system with only minimal adult or librarian guidance. Finally, the systems analyst will make certain that the project is completed in a timely fashion and within its budget. Designing, testing, and implementing this program should take no longer than six months and the cost will remain under $1,000.	Apply(implement)
A great model for this task may include the Denver Public Library and the Kid page they have established there. http://kids.denverlibrary.org/	Understand(exemplify)
S1 1/24/08 8:08 PM Hello S15: Terrific idea. No doubt the development of such a system will make children more interested in accessing the materials available to them in the library.	Understand (explain) – cause and effect
I noticed that one of your objectives is to hire a person to work with the children's librarian and shystem analyst in order to develop and install the visual OPAC. I wonder whether it might be of value to have a joint requirements planninng meeting that would include children's librarians from across the county. In your case scenario, these visual OPACs will be installed across the county and it might be a good idea to have buy in from the other librarians so that they feel included in the project. Another possibility is to have some kind of "kick off" celebration (very small of course) and invite the other librarians from across the county so that they all feel like they are part of the project.	Evaluate(critique)
I think "buy in" is important, as it is often human nature to poke holes in a finished product if it is simply presented to you but people will be more accepting if they feel as if they had a hand in the design.	
Good luck with your project and have a terrific weekend. Very Respectfully, S1	Understand(Explain) – cause and effect
S19 1/26/08 11:27 PM	

I like the idea of incorporating current users of visual OPAC's into the team structure. You might go a step farther and invite your inspiration children OPAC designer from the Denver Public Library.	Evaluate(critique)
S11 1/25/08 3:20 PM S15, I think this is a great idea as well. The first thing that came to mind while I was reading your post was my daughter and her 'First Reader' books.	Understand(exemplify)
For anyone who is not familiar with these books, they are essentially books that include pictures embedded within the paragraphs to stimulate recognition; the actual word is also printed under the picture.	Understand(explain) – cause and effect
I think to how the visual aid has actuality stimulated her interest in reading-she is still only 2 years old, but loves to "read" the books to us. I would think that children would be very welcoming of a visual interface and would want to use it as opposed to have to use it.	Understand(Explain)
Encouraging children to use this interface at an early age seems to only increase the chances of people becoming more enabled as users and becoming better searchers.	Understand(explain)
S13 1/27/08 10:25 PM My library has something similar on a very basic level. Its concept is good (pictures used for words) but it does not get used very often. It's in an almost hidden area far away from the most visited areas of the children's section.	Evaluate (critique)
It also requires a large amount of adult help. It's almost like a facade of a children's OPAC. It looks like a child could use it, but they probably cannot. I would be very interested in what a system like this would deliver. How child-friendly would it be	Evaluate(critique)
S10 1/25/08 7:29 PM Hi S15, S1 and S11, S15, this is a great idea, and you all make some good points. I like S1's thoughts about librarians "buying in", and how it can help to have them involved as stakeholders.	Understand(explain)
Since our library system's major web/catalog redesign, I've been on the committee, composed of children's staff from various branches system wide, for Kidspace. It's the children friendly webpage of our Opac. This has really just been a webpage, which provides great links to sites for fun, learning, homework, etc.. but the catalog is fundamentally the same, it doesn't provide a children friendly catalog interface. The new webdesign software allows those of us on the committee to change certain features of the website, post new documents, surveys, etc.. but the catalog is a seperate system that we can't really manipulate well.	Understand(compare)
We're currently working on an actual interface that would do some of the things S15 mentions, primarily provide a more visual interface.	
A few months ago we had a presenter from Grolier in presenting some of the features of their GrolierKids interface. One of the things she mentioned was that they've found through research that kids prefer to search through icons, so the page is layed out to indicate various areas, such as Animals, Lands and Peoples, etc..	
It's still possible to do more of a tradtional search, but the icons make it more intuitive for kids. (I was reminded of this when S11 related about the rebus readers.)	
Anyway, the Grolier rep mentioned how they would actually bring kids in to test the system after each iteration which was incredibly valuable, because even with the research studies, and what they "knew" about how kids would use the system, each test with actual kids revealed some new insight, or design flaw, or happy accident, etc..	Remember(recall)
S15, I wonder if you should include kid focus groups/ feedback in your project scope? If	

Message	Behavior Type
nothing else, it would also get the kids to "buy in". I witness kids teaching each other how to get to different internet games, change fonts in word, etc.. constantly. Imagine if you had at least one kid from each branch come and "test" the system and give feedback, they'd feel part of the process, valued, and they'd want to show other kids, so it would help spread the word. It's the same concept that S1 mentioned about the staff "buying in." Inclusion in the process helps the staff and kids feel like they're a part of the system, and they're less likely to be negative about the change, AND they'll return to their respective branches and show others all the neat tricks, and how to find things.	Evaluate(critique) Understand(compare)
S2 1/25/08 7:45 PM S10 Kidspace is awesome! It's so appealing . . . and at a quick glance contains some great information! Thanks for sharing this with us.	
S10 1/30/08 3:23 PM Thanks S2. Hopefully, it will get even better!	
S15 1/26/08 2:32 PM I also think kid testing would be an important part of this process. I work with children, and I am always amazed by the types of things that they are actually drawn to or interested in. At my job we have many different works(toys) that are put out for them and some that I think will be a big hit may end up completely ignored, while others are a huge hit. Having children test the visual OPAC would be the best way to determine what works for them and what doesn't.	Understand(exemplify) Understand(exemplify) Evaluate(critique)
S7 1/26/08 4:22 PM Great idea S2! This whole visual thing is super. Just think about how unforgiving OPACS are with misspelling words and how frustrating that can be to kids. A visual platform would be so much more useful and lead to greater success for children in navigating the library catalogs. S10, I think your idea about involving the children through a focus group is a great one and I believe it will make the project more successful in the end. S7	Understand(compare) Understand(summarize)
S5 1/26/08 1:44 PM I think another good way to find information on this topic would be to contact elementary school libraries and find out what kinds of catalog tools they use for easy and fun access for children.	Understand(exemplify)

8.10.11 Week 3 -Question 1-Thread 1 (Waters and Gasson)

Requirements analysis S20 1/22/08 2:42 PM   [1]
    RE: Requirements analysis S1 1/23/08 3:30 PM   [2]
    RE: Requirements analysis S11 1/23/08 9:46 PM   [3]
      RE: Requirements analysis S20 1/24/08 9:53 AM   [4]
        RE: Requirements analysis S6 1/24/08 11:53 AM   [5]
        RE: Requirements analysis S19 1/26/08 8:09 PM   [6]
    RE: Requirements analysis S8 1/25/08 3:11 PM   [7]
      RE: Requirements analysis S20 1/26/08 2:49 PM   [8]
        RE: Requirements analysis S13 1/27/08 7:16 PM   [9]

Message	Behavior Type
S20 1/22/08 2:42 PM Hi everyone –	 Complicator

Requirements analysis never really ends because it is a necessary maintenance feature for the lifetime of a system.	
Requirements analysis involves the management of a process to "submit proposed changes to requirements for a system" (Bentley & Whitten, 2007, p. 189).	Contributor
When problems or potential improvements to a system begin to develop, there needs to be a way for those interacting with and noticing problems with the system to be able to gets these issues assessed for potential changes.	Contributor
Requirements analysis never really ends, then, until the end of the lifetime of the system; problems and potential advancements will continue to arise due to external impacts and aging technology.	Complicator
The reality of never ending requirements analysis can be accommodated through a number of ways, most of which revolve around effective communication. Open communication between system owners, users, analysts, designers, and builders must exist in order for problems to be effectively reported and assessed. This communication can be done via telephone, email, or face‑to‑face. It could also be done through a more structured system, such as requirements management forms that could be filled out on paper or online, perhaps through a intranet website specifically designated for channeling system problem reports.	Contributor
This structure could be set up to automatically communicate the status of the reports to those involved with their introduction and assessment. This automatic communication could aid in the reports' originators feeling "kept in the loop" and validated for their suggestions. It could also aid in problems and potential improvements being recognized, assessed, and solved/implemented in a much more efficient and timely manner. Thanks, S20	Contributor
S1 1/23/08 3:30 PM Hello S20 I think that you are absolutely right in that there is a never ending cycle of requirements analysis that continues as the new information system is introduced, used, and improved. When the asset has reached its' life expectancy, the process begins again.	Vicarious-Acknowledger
Interestingly, (or not, depending upon how you're feeling about it ;), much of the requirements analysis you perform on a legacy asset can be plugged into the scope definition phase in developing a new system.	Facilitator
To put it another way, as we try to figure out what we need our system to be doing, and how we are going make the system to do that, we are constantly perform requirements analysis.	Complicator
Once we decide that we can't tweak our system any further, we might want to start from scratch or engage in business process redesign. It seems to me that we could plug much of the work we've done in our continual requirements analysis directly into scope definition as we start to define our problems for the new system.	Contributor
I like your idea of an intranet website dedicated to project development. I think proper communication is key to the development and implementation of any project.	Facilitator
Additionally, everybody up and down the food chan needs to feel both informed and heard if they are going to be onboard with a project that is going to require them to change how they perform their jobs. Good post - thanks. Very Respectfully, S1	Contributor
S11 1/23/08 9:46 PM S20, I think your point on open communication cannot be stressed enough. I think I failed to effectively think about this point in my post. I tended to think of the issue through only the analysts eyes, but as you point out one cannot be effective in analyzing requirements without effective communication.	Facilitator

In the end, it will really be the users dealing with the system on a day to day basis, so I suppose that it would be extremely important to keep some sort of outlet for users to communicate ideas in order to keep the continuation of requirements analysis intact. S11	Facilitator
S20 1/24/08 9:53 AM Hi S11 - The idea of communication with the users is a big one for me, probably because I worked at a company where miscommunication (and lack of communication!) seemed inherent in the system, and I was often the user who was not being heard. My co-workers and I were always running into possible redundancies in our work (Excel spreadsheets that needed to be updated but just reported the same data, for example), but we didn't know who to report it to, nor did we have the confidence that anything would be done about it. Talk about two ingredients for disaster, eh? I became a very disillusioned worker rather quickly in that environment. :-) S20	Vicarious-Acknowledger Contributor Contributor
S6 1/24/08 11:53 AM S20 and S11 I couldn't agree more with the idea of communication between all stakeholders being vital to the success of any system. I have also had the opportunity to work where there was communication and it was very beneficial and have also seen where the lack of communication ends in as s20 said "disaster." I wish some of the administration would have taken this class! S6	Vicarious-Acknowledger Contributor
S19 1/26/08 8:09 PM I also think communication is essential, not only in the requirements analysis, but in all aspects of the library's functionality. There is a need for improved communication at my library as well. We've come a long way, but still there are a lot of issues that are not ommunicated effectively. The lack of communication leaves a lot of us not only in the dark, but frustrated because some of the information could have prevented a lot of reduncancy in our work. In order to improve communication between library staff members and library faculty members we have instituted several BLOGS, have more frequent staff and faculty meetings, and put out a newsletter every so often. Thanks for reiterating the importance of communication!	Facilitator Contributor Contributor Vicarious-Acknowledger
S8 1/25/08 3:11 PM Hi S20. I think that you are completely correct about the importance of communication being open and necessary for requirements analysis to successfully continue on a long term basis. I do have some rather practical concerns about such theoretical and general ideas of communication remaining open. I guess my concern is that one is limited by the structure and tone of the organization itself. For example, in some organizations, top management doesn't care for underlings who don't follow chain of command in order to make much needed comments. Then, if upper management insists on such ideas filtering through chain of command, there may be a filtering effect such that what is really said and meant by the end users may not be properly communicated to those involved in making the changes which will assisted in continuing improvement of the system. Sometimes in these situations, people are also reluctant to make suggestions as the suggestions might be perceived as complaints. In some companies, there is a tendency for people not to admit that something isn't working as planned in a particular department, and Thus, to bury the problems. I suppose that in reality, this is all within the realm of trying to keep communication" open, but I wonder as a practical matter, if this really exists in the real world.	Vicarious-Acknowledger Complicator Complicator Complicator
S20 1/26/08 2:49 PM Hi S8 -	

You know, as I was posting my answer, I thought to myself, "I wonder how practical this idea is?" I definitely understand your thoughts. Would "underlings" even use it? Would they be worried about losing their jobs if they "complained" too much?	Facilitator
	Complicator
Perhaps it would need some sort of managerial approval, or the website would only be open to management for submitting ideas. That's part of management's job anyway, isn't it? Like any requirements analysis and management,	
I'm sure the process developed to manage the system would depend on the specific needs and organization of the business.	Contributor
S13 1/27/08 7:16 PM I think that it is very important for members of a project (on any level) to voice their opinions concerning business requirements. Communication is key in developing a successful system.	Vicarious-Acknowledger
However, this does remind me of last week's discussion. I think we noted that while communication is vital, one does not want to be swayed or overwhelmed by excessive opinions. This could put the process offtrack, create muddled development, or even more confusion.	Complicator
One's task can certainly become a burden if the communication system opens floodgates to "complaining."	Complicator

8.10.12 Week 3 -Question 1-Thread 1 (Anderson & Krathwohl)

Message	Content Analysis of message Anderson and Krathwohl
S20 1/22/08 2:42 PM Hi everyone – Requirements analysis never really ends because it is a necessary maintenance feature for the lifetime of a system.	
Requirements analysis involves the management of a process to "submit proposed changes to requirements for a system" (Bentley & Whitten, 2007, p. 189).	Remember(recall)
When problems or potential improvements to a system begin to develop, there needs to be a way for those interacting with and noticing problems with the system to be able to gets these issues assessed for potential changes.	
Requirements analysis never really ends, then, until the end of the lifetime of the system; problems and potential advancements will continue to arise due to external impacts and aging technology.	Create(generate)
	Create(generate)
The reality of never ending requirements analysis can be accommodated through a number of ways, most of which revolve around effective communication. Open communication between system owners, users, analysts, designers, and builders must	

exist in order for problems to be effectively reported and assessed. This communication can be done via telephone, email, or face‐to‐face. It could also be done through a more structured system, such as requirements management forms that could be filled out on paper or online, perhaps through a intranet website specifically designated for channeling system problem reports.	Apply(implement)
This structure could be set up to automatically communicate the status of the reports to those involved with their introduction and assessment. This automatic communication could aid in the reports' originators feeling "kept in the loop" and validated for their suggestions. It could also aid in problems and potential improvements being recognized, assessed, and solved/implemented in a much more efficient and timely manner. Thanks, S20	Create(generate)
S1 1/23/08 3:30 PM Hello S20 I think that you are absolutely right in that there is a never ending cycle of requirements analysis that continues as the new information system is introduced, used, and improved. When the asset has reached its' life expectancy, the process begins again.	Summarize
Interestingly, (or not, depending upon how you're feeling about it ;), much of the requirements analysis you perform on a legacy asset can be plugged into the scope definition phase in developing a new system.	Create(generate)
To put it another way, as we try to figure out what we need our system to be doing, and how we are going make the system to do that, we are constantly perform requirements analysis.	
Once we decide that we can't tweak our system any further, we might want to start from scratch or engage in business process redesign. It seems to me that we could plug much of the work we've done in our continual requirements analysis directly into scope definition as we start to define our problems for the new system.	Create(generate)
I like your idea of an intranet website dedicated to project development. I think proper communication is key to the development and implementation of any project.	Create(generate)
Additionally, everybody up and down the food chan needs to feel both informed and heard if they are going to be onboard with a project that is going to require them to change how they perform their jobs. Good post - thanks. Very Respectfully, S1	Create(generate)
S11 1/23/08 9:46 PM S20, I think your point on open communication cannot be stressed enough. I think I failed to effectively think about this point in my post. I tended to think of the issue through only the analysts eyes, but as you point out one cannot be effective in analyzing requirements without effective communication.	Evaluate(critique)
In the end, it will really be the users dealing with the system on a day to day basis, so I suppose that it would be extremely important to keep some sort of outlet for users to communicate ideas in order to keep the continuation of requirements analysis intact. S11	Create(generate)
S20 1/24/08 9:53 AM Hi S11 - The idea of communication with the users is a big one for me, probably because I worked at a company where miscommunication (and lack of communication!) seemed inherent in the system, and I was often the user who was not being heard.	Understand(Exemplify)
My co-workers and I were always running into possible redundancies in our work (Excel spreadsheets that needed to be updated but just reported the same data, for example), but we didn't know who to report it to, nor did we have the confidence that anything would be done about it. Talk about two ingredients for disaster, eh? I became a very disillusioned worker rather quickly in that environment. :-) S20	Understand(exemplify)
S6 1/24/08 11:53 AM S20 and S11 I couldn't agree more with the idea of communication between all stakeholders being	

vital to the success of any system. I have also had the opportunity to work where there was communication and it was very beneficial and have also seen where the lack of communication ends in as s20 said "disaster." I wish some of the administration would have taken this class! S6	Understand(exemplify)
S19 1/26/08 8:09 PM I also think communication is essential, not only in the requirements analysis, but in all aspects of the library's functionality. There is a need for improved communication at my library as well.	Create(generate)
We've come a long way, but still there are a lot of issues that are not ommunicated effectively. The lack of communication leaves a lot of us not only in the dark, but frustrated because some of the information could have prevented a lot of reduncancy in our work.	Understand(explain)
In order to improve communication between library staff members and library faculty members we have instituted several BLOGS, have more frequent staff and faculty meetings, and put out a newsletter every so often. Thanks for reiterating the importance of communication!	Apply(implement)
S8 1/25/08 3:11 PM Hi S20. I think that you are completely correct about the importance of communication being open and necessary for requirements analysis to successfully continue on a long term basis. I do have some rather practical concerns about such theoretical and general ideas of communication remaining open. I guess my concern is that one is limited by the structure and tone of the organization itself. For example, in some organizations, top management doesn't care for underlings who don't follow chain of command in order to make much needed comments. Then, if upper management insists on such ideas filtering through chain of command, there may be a filtering effect such that what is really said and meant by the end users may not be properly communicated to those involved in making the changes which will assisted in continuing improvement of the system.	Evaluate(critique)
Sometimes in these situations, people are also reluctant to make suggestions as the suggestions might be perceived as complaints. In some companies, there is a tendency for people not to admit that something isn't working as planned in a particular department, and Thus, to bury the problems.	Evaluate(critique)
I suppose that in reality, this is all within the realm of trying to keep communication" open, but I wonder as a practical matter, if this really exists in the real world.	Evaluate(critique)
S20 1/26/08 2:49 PM Hi S8 - You know, as I was posting my answer, I thought to myself, "I wonder how practical this idea is?" I definitely understand your thoughts. Would "underlings" even use it? Would they be worried about losing their jobs if they "complained" too much?	Evaluate(Critique)
Perhaps it would need some sort of managerial approval, or the website would only be open to management for submitting ideas. That's part of management's job anyway, isn't it? Like any requirements analysis and management,	Create(generate)
I'm sure the process developed to manage the system would depend on the specific needs and organization of the business.	Create(generate)
S13 1/27/08 7:16 PM I think that it is very important for members of a project (on any level) to voice their opinions concerning business requirements. Communication is key in developing a successful system.	Understand(explain)
However, this does remind me of last week's discussion. I think we noted that while communication is vital, one does not want to be swayed or overwhelmed by excessive opinions. This could put the process offtrack, create muddled development, or even more	Evaluate(critique)

confusion.	
One's task can certainly become a burden if the communication system opens floodgates to "complaining."	Explain

8.10.13 Week 10 -Question 1-Thread 12 (Waters and Gasson)

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Yay! Week 10!   S20   3/13/08 5:25 PM                              [1]
    RE: Yay! Week 10!    S7    3/13/08 7:20 PM                      [2]
        RE: Yay! Week 10!    S2    3/13/08 7:46 PM                  [3]
            RE: Yay! Week 10!    S20   3/14/08 3:16 PM              [4]
            RE: Yay! Week 10!    S19   3/16/08 8:26 PM              [5]
        RE: Yay! Week 10!    S1    3/14/08 10:25 AM                 [6]
            RE: Yay! Week 10!    S20   3/14/08 3:17 PM              [7]
                RE: Yay! Week 10!    S14   3/16/08 12:02 AM         [8]
                    RE: Yay! Week 10!    S22   3/16/08 2:43 AM      [9]
        RE: Yay! Week 10!    S10   3/16/08 2:45 PM                  [10]
        RE: Yay! Week 10!    S4    3/16/08 5:23 PM                  [11]
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Message	Behavior Type
S20 3/13/08 5:25 PM Hi everyone - Testing should be done throughout the development process. As Whitten and Bentley state, "testing should not be deferred until after the entire program has been written" (p. 688). Not only does testing ensure that each individual program works properly, but they also ensure that new programming integrates properly with the entire system. Thus, testing needs to be conducted systematically and at every level, to catch as many "bugs" as possible. For example, the end-users conduct their business tasks and note if the new system works properly for their business needs.	Contributor
There are a lot of tests that need to be conducted to check the new system. Tests are performed on networks, databases, new (licensed) software packages, and new (in-house) programs. Additionally, these aspects of the system must be tested in conjunction with each other, i.e., system testing. Finally, a systems acceptance test needs to be performed "by end users using real data over an extended period of time" and covers verification, validation, and audit testing (p. 691). This final testing phase certifies that the final system is ready to implement and is the last chance for system users and owners to accept or reject the new system.	Contributor
Extensive testing has a number of implications. Testing leads to less troubleshooting after a system is implemented. By catching problems prior to implementation, fixing the system's problems is cheaper and more time effective. **However, testing takes time. Spending too much time testing could lead to unnecessary delays; it is unlikely that testing will catch every single problem**, and trying to catch all of them would be impractical. Additionally, the amount of testing is dependent on the type of project being conducted. Some projects to not involve licensing new software, for example, and so testing related to new software is not needed. Thanks, S20	Complicator
S7 3/13/08 7:20 PM "...and trying to catch all of them would be impractical" S20, can I ask what you meant by that? Why would it be impractical? I think catching as many "bugs" as possible (and as early as possible) is a good thing, there is less to fix later in the process. S7	facilitator
S2 3/13/08 7:46 PM S7 and S20,	

I don't know if this is what S20 was getting at, but I find it helpful to keep in mind that no system or solution will be perfect. Since I'm a cautious type (and generally a perfectionist), I could imagine working on a project and overtesting . . . being afraid to put the system into use. At some point testing could just delay the process . . .S2	facilitator
S20 3/14/08 3:16 PM Yes, S2, that's the idea I had in mind. Yes, we want to catch as many as we can, but we wouldn't necessarily want to keep testing if the cost of testing outweighed the costs of fixing glitches we might find after implementation. Does that help to clarify at all? S20	facilitator
S19 3/16/08 8:26 PM S2, I totally agree with you. I am a perfectionist myself and would probably be the first to overtest the system. I guess it would help to keep in mind that the little problems could be tweaked later. It's the big one's one shoudl be searching for before the implementation phase. Thanks for brining this up!	facilitator
S1 3/14/08 10:25 AM Hello S20, I completely agree with you that testing is something that should be done througout the development process and I think you summarized the key points of Chapter 19 nicely.	V-A
I have a friend that was recently thinking of licensing a software product but wanted to test the product out before buying it. This was an off the shelf system that had been billed as a complete package mind you, meaning that nothing was going to have to be done in order to tweak it. As it turned out, she let her IT team loose on that software and they found a bunch of bugs and gaps that needed to be corrected. The software company was so grateful for her teams hard work that they licensed the software to her at a discout rate.	Contributor
We always need to test anything we install on our systems. Software is kind of like medicine Sometimes things are compataible and sometimes they are not. The only way to determine whether we have a verifiably working system is to test it. Good luck on your exam. Very Respectfully, S1	Contributor
S20 3/14/08 3:17 PM Thanks for the story. Here's hoping for a similar experience in the field! - S20	
S14 3/16/08 12:02 AM I just thought I'd just put in my two cents worth of personal experience... The decision to say "OK, that's enough testing, let's do this," is not always done by the person who should be controlling the project.	Contributor
In my case, I was working in the news department of a TV station that was one of a group of nine stations. The upper management arbitrarily imposed a new computer system on four stations, including mine. It was a trainwreck of a system. It didn't do anywhere near what it claimed it was capable of doing. Three of the stations accepted it and put it in service without any delay, and experienced nightmare after nightmare. The systems managers and their local managers didn't have the guts to say, "This system is awful. The vendor needs to get a lot of bugs out of the system." They had to deal with constant problems and system crashes on a daily basis.	Contributor
In my situation, the local management listened to my explanations that, until the new system underwent huge debugging, our old system was better. My managers agreed, and I spent six full months going back and forth with the programmers until they got it right and we put the system on line.	Contributor
The people who sold us the new system lost about $6000 in licensing fees because our station didn't use it for 6 months. They probably paid several times that in wages to the freelance programmers they had to pay to correct the problems. Pre-release testing is	Contributor

definitely a good thing.	
S22 3/16/08 2:43 AM S14, I bet your supervisors were glad they listened to you and that you were able to get the bugs worked out with the programmers before putting it into operation. But six months - wow - that was a lot of bugs to be fixed as well as time and effort on your part Kudos to you! I can just imagine what a headache the other three stations had, I bet they wished they had someone like you who had spoken up for them before implementation. S22	Facilitator'
S10 3/16/08 2:45 PM S20, After reading your post and everyone's responses I'm thinking thats there's probably a very fine line between overtesting and undertesting.	Closer
Reading both S14 and S1's stories made me think of various examples in my own work experience when things were either tested too much or not enough. Usually, not enough, or not by the right end users.	Closer
As S14 pointed out, sometimes the upper management makes a decision to make a change, but they're not the end users involved with the system to understand potential problems.	Facilitator
On the other hand, it's possible to overanalyze a system, and to loose yourself in testing. It is impossible to imagine and test for every possible bug. Sometimes, particularly if there is currently no system in place, it's better to have something with a few bugs that need to be worked out than nothing at all.	Complicator
We used to have to sign all internet users up by hand on waiting lists. It took up probably about 80-90% of the reference staff's time because we have such high demand. Because there was no automated time-off for the next person's turn we'd end up refereeing arguements between patrons who didn't want to get off yet, which would back up the next sign up time, etc..When our system began testing different automated interet sign-up programs we asked us to go ahead and pilot them bugs and all, just to get something going! It was much less work and hassle to deal with the different bugs then to wait for things to be perfect.	Contributor
Of course, I guess we were part of the testing process, but I guess maybe that would be one way to balance out the need to rush and the need to test to perfection. Anyway, good discussion building post. Good luck on the final! S10	facilitator
S4 3/16/08 5:23 PM There is an old adage that says - An ounce of prevention is worth a pound of cure. This is what continual testing is for systems development.	Contributor
As you said there will always be a few problems that aren't caught, but I would rather deal with a few small problems towards the implementation stage than several large ones later on.	Contributor

8.10.14 Week 10 -Question 1-Thread 12 (Anderson & Krathwohl)

Yay! Week 10!   S20   3/13/08 5:25 PM   [1]
    RE: Yay! Week 10!   S7   3/13/08 7:20 PM   [2]
        RE: Yay! Week 10!   S2   3/13/08 7:46 PM   [3]
            RE: Yay! Week 10!   S20   3/14/08 3:16 PM   [4]
            RE: Yay! Week 10!   S19   3/16/08 8:26 PM   [5]
        RE: Yay! Week 10!   S1   3/14/08 10:25 AM   [6]
            RE: Yay! Week 10!   S20 3/14/08 3:17 PM   [7]
                RE: Yay! Week 10!   S14 3/16/08 12:02 AM   [8]
                    RE: Yay! Week 10!   S22 3/16/08 2:43 AM   [9]
        RE: Yay! Week 10!   S10 3/16/08 2:45 PM   [10]
        RE: Yay! Week 10!   S4   3/16/08 5:23 PM   [11]

Message	Content Analysis of message Anderson and Krathwohl
S20 3/13/08 5:25 PM Hi everyone - Testing should be done throughout the development process. As Whitten and Bentley state, "testing should not be deferred until after the entire program has been written" (p. 688). Not only does testing ensure that each individual program works properly, but they also ensure that new programming integrates properly with the entire system. Thus, testing needs to be conducted systematically and at every level, to catch as many "bugs" as possible. For example, the end-users conduct their business tasks and note if the new system works properly for their business needs.	Understand(explain)
There are a lot of tests that need to be conducted to check the new system. Tests are performed on networks, databases, new (licensed) software packages, and new (in-house) programs. Additionally, these aspects of the system must be tested in conjunction with each other, i.e., system testing. Finally, a systems acceptance test needs to be performed "by end users using real data over an extended period of time" and covers verification, validation, and audit testing (p. 691). This final testing phase certifies that the final system is ready to implement and is the last chance for system users and owners to accept or reject the new system.	Create(generate)
Extensive testing has a number of implications. Testing leads to less troubleshooting after a system is implemented. By catching problems prior to implementation, fixing the system's problems is cheaper and more time effective. However, testing takes time. Spending too much time testing could lead to unnecessary delays; it is unlikely that testing will catch every single problem, and trying to catch all of them would be impractical. Additionally, the amount of testing is dependent on the type of project being conducted. Some projects to not involve licensing new software, for example, and so testing related to new software is not needed. Thanks, S20	Evaluate(critique)
S7 /13/08 7:20 PM "...and trying to catch all of them would be impractical" S20, can I ask what you meant by that? Why would it be impractical? I think catching as many "bugs" as possible (and as early as possible) is a good thing, there is less to fix later in the process. S7	Evaluate(critique)
S 2 3/13/08 7:46 PM S7 and S20, I don't know if this is what S20 was getting at, but I find it helpful to keep in mind that no system or solution will be perfect. Since I'm a cautious type (and generally a perfectionist), I could imagine working on a project and overtesting . . . being afraid to put the system into use. At some point testing could just delay the process . . .S2	Evaluate(critique)
S20 3/14/08 3:16 PM Yes, S2, that's the idea I had in mind. Yes, we want to catch as many as we can, but we wouldn't necessarily want to keep testing if the cost of testing outweighed the costs of fixing glitches we might find after implementation. Does that help to clarify at all? S20	Understand(explain)
S19 3/16/08 8:26 PM S2, I totally agree with you. I am a perfectionist myself and would probably be the first to overtest the system. I guess it would help to keep in mind that the little problems could be tweaked later. It's the big one's one shoudl be searching for before the implementation phase. Thanks for brining this up!	Understand(explain)
S1 3/14/08 10:25 AM Hello S20,	

I completely agree with you that testing is something that should be done througout the development process and I think you summarized the key points of Chapter 19 nicely. I have a friend that was recently thinking of licensing a software product but wanted to test the product out before buying it. This was an off the shelf system that had been billed as a complete package mind you, meaning that nothing was going to have to be done in order to tweak it. As it turned out, she let her IT team loose on that software and they found a bunch of bugs and gaps that needed to be corrected. The software company was so grateful for her teams hard work that they licensed the software to her at a discout rate. We always need to test anything we install on our systems. Software is kind of like medicine Sometimes things are compataible and sometimes they are not. The only way to determine whether we have a verifiably working system is to test it. Good luck on your exam. Very Respectfully, S1	Understand(Compare) Understand(Exemplify) Understand(Compare)
S20 3/14/08 3:17 PM Thanks for the story. Here's hoping for a similar experience in the field! - S20	
S14 3/16/08 12:02 AM I just thought I'd just put in my two cents worth of personal experience... The decision to say "OK, that's enough testing, let's do this," is not always done by the person who should be controlling the project. In my case, I was working in the news department of a TV station that was one of a group of nine stations. The upper management arbitrarily imposed a new computer system on four stations, including mine. It was a trainwreck of a system. It didn't do anywhere near what it claimed it was capable of doing. Three of the stations accepted it and put it in service without any delay, and experienced nightmare after nightmare. The systems managers and their local managers didn't have the guts to say, "This system is awful. The vendor needs to get a lot of bugs out of the system." They had to deal with constant problems and system crashes on a daily basis. In my situation, the local management listened to my explanations that, until the new system underwent huge debugging, our old system was better. My managers agreed, and I spent six full months going back and forth with the programmers until they got it right and we put the system on line. The people who sold us the new system lost about $6000 in licensing fees because our station didn't use it for 6 months. They probably paid several times that in wages to the freelance programmers they had to pay to correct the problems. Pre-release testing is definitely a good thing.	Understand(Exemplify) Understand(Exemplify)
S22 3/16/08 2:43 AM S14, I bet your supervisors were glad they listened to you and that you were able to get the bugs worked out with the programmers before putting it into operation. But six months - wow - that was a lot of bugs to be fixed as well as time and effort on your part Kudos to you! I can just imagine what a headache the other three stations had, I bet they wished they had someone like you who had spoken up for them before implementation. S22	
S10 3/16/08 2:45 PM S20, After reading your post and everyone's responses I'm thinking thats there's probably a very fine line between overtesting and undertesting. Reading both S14 and S1's stories made me think of various examples in my own work experience when things were either tested too much or not enough. Usually, not enough, or not by the right end users. As S14 pointed out, sometimes the upper management makes a decision to make a change, but they're not the end users involved with the system to understand potential problems.	Understand(Compare) Analyze(Differentiate)

On the other hand, it's possible to overanalyze a system, and to loose yourself in testing. It is impossible to imagine and test for every possible bug. Sometimes, particularly if there is currently no system in place, it's better to have something with a few bugs that need to be worked out than nothing at all.	Understand(Compare)
We used to have to sign all internet users up by hand on waiting lists. It took up probably about 80-90% of the reference staff's time because we have such high demand. Because there was no automated time-off for the next person's turn we'd end up refereeing arguements between patrons who didn't want to get off yet, which would back up the next sign up time, etc..When our system began testing different automated interet sign-up programs we asked us to go ahead and pilot them bugs and all, just to get something going! It was much less work and hassle to deal with the different bugs then to wait for things to be perfect.	Understand(Exemplify)
Of course, I guess we were part of the testing process, but I guess maybe that would be one way to balance out the need to rush and the need to test to perfection. Anyway, good discussion building post. Good luck on the final! S10	
S4 3/16/08 5:23 PM There is an old adage that says - An ounce of prevention is worth a pound of cure. This is what continual testing is for systems development. As you said there will always be a few problems that aren't caught, but I would rather deal with a few small problems towards the implementation stage than several large ones later on.	Understand(Compare)

8.10.15 Week 6 -Question 1-Thread 4 (Waters and Gasson)

Normalization S7 2/15/08 2:42 PM   [1]
    RE: Normalization S2 2/16/08 3:52 PM   [2]
    RE: Normalization S12 2/17/08 7:49 PM   [3]
        RE: Normalization S7 2/17/08 10:59 PM   [4]
    RE: Normalization/Part 2 S7 2/17/08 11:10 PM   [5]
        RE: Normalization/Part 2 S3 2/18/08 2:55 PM   [6]
        RE: Normalization/Part 2 S7 2/19/08 2:04 PM   [7]
    RE: Normalization S16 2/18/08 5:15 PM   [8]
        RE: Normalization S20 2/18/08 5:36 PM   [9]
           RE: Normalization S7 2/19/08 1:49 PM   [10]

Message	Behavior Type
S7 2/15/08 2:42 PM I created seven tables from my ERD, one for each entity. The fields in the tables represent the atributes. I suppose that I could be totally off in my interpretation of this weeks assignment, but this is what I thought I was supposed to do.	P-K-E
Please comment if you think this is not what was expected for this week. My comments will have to follow later, since I have to go to work now. Thanks for looking...S7	P-K-E
S2 2/16/08 3:52 PM S7, I was having so much time wrapping my mind around the process of normalizing and identifying integrity issues that I didn't spend time on the tables.	Contributor
SO . . . I really appreciate your example of how to set them up. Thanks! I can now better envision the tables I would use for the publishing ERD. S2	Vicarious-Acknowledger
S12 2/17/08 7:49 PM This looks like a more effective way of dealing with multiple branches of a library than	Facilitator

the ERD. It looks like you were able to have some fun with it. One thing that I noticed though is that the different tables are not connected by lines to show the relationships. I think they might need to be though I am not clear about any of this really. :)	Facilitator
S7 2/17/08 10:59 PM No, I don't think the tables have to be connected by lines, they are just tables after all. The ERD shows the relationship. S7	Facilitator
S7 2/17/08 11:10 PM Here is part 2! After looking around, I decided that I needed to show my normalized ERD as well, not just the tables, so here it is. I am hoping that the ERD is in 2NF, but I am not sure. I tried to change the address fields to represent U.S. addresses: street, city, state, zip etc. I decided to keep Employee and Supervisor two different entities instead of creating a Super Entity of Employee to encompass both. So, this could be an integrity issue perhaps, but I am not sure.	Contributor Contributor Facilitator
S3 2/18/08 2:55 PM Because the employee and supervisor entities contain almost the exact same attributes, I think the supervisor entity could be changed to include one key difference. Also, in regard to your tables and S12's post, in the book the tables have connecting lines to show the relationships. I did not add them to my tables either. I agree that for this assignment and the limited space in Word, the ERD adequately shows the relationship.s	Facilitator Complicator Facilitator
S7 2/19/08 2:04 PM As far as database implementation is concernd, I don't think there would be any problems. I have still tried to keep everything as simple as possible, so I think implementation would work out well. Database integrity: Key integrity: Every table should have a primary key Domain integrity: appropriate controls must be esigned to ensure that no field takes on an inappropriate value. Referential Integrity: the assurance that a foreign key value in one table has a matching primary kep in the related table. I believe I addressed key integrity and referential integrity well enough in my other posts. I don't think I addressed domain integrity at all. It is something that I just "assume" to be there and therfore did not mention it. It is important to set the limits however to ensure that the data entered is in the correct format.	Facilitator Contributor Contributor Contributor Facilitator
S16 2/18/08 5:15 PM I'm a little bit unclear on these tables. Who uses them? And when? Is this what a user sees when s/he looks up an item, or a person? Does all the related information come up? I think I had a different conception of how this would all work, but I'm not really sure how it's working altogether... help?	P-K-e P-K-e
S20 2/18/08 5:36 PM Hi S16 - Here's my understanding of it all, and hopefully it's right and it makes sense! I'll talk about in relation to a library. The ERD helps the library owners and users understand how all of the information kept in the library system relates to each other, and how people relate to the information, and how it's all stored. All of those relevant items - patron, book record, check-out - are all entities on the	Closer Contributor

diagram.	
The tables are what you create when you want to see a list of information from the system. For example, I may be the manager of the library and want a list of all my staff and their file information (address, pay, SSN, etc.). So, I can request the system to create a "staff table" with all of those attributes as part of the table. I, the manager, use this staff information when I need to re-evaluate staffing at my branch (for example).	Contributor Contributor
I, the librarian assistant, have been requested to make a list of all the books that are "lost," (which may be an entry for the "Status" attribute under "Book"). So, I request a table to be made by the system of all Book records that are marked "lost" under "status." I now have a useful table I can give to my boss. This wouldn't be possible if the system was not organized properly.	facilitator
A patron would see the data kept on books and cds when they search. All those attributes - author, title, publisher – they can use to search in the information system. All that information needs to be kept in an organized system, so it can be searched for. That's why we organize the system with the ERD and not just put it in the computer all hodge-podge.	
Does that help at all? I hope I haven't confused you more. Or maybe someone needs to tell me I have it wrong! Thanks, S20	facilitator P-K_E
S7 2/19/08 1:49 PM Great response to S16's question! Thank You for the great explanations! S7	Vicarious-Acknowledger

8.10.16 Week 6 -Question 1-Thread 4 (Anderson & Krathwohl)

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Normalization S7 2/15/08 2:42 PM                    [1]
     RE: Normalization S2 2/16/08 3:52 PM            [2]
     RE: Normalization S12 2/17/08 7:49 PM           [3]
          RE: Normalization S7 2/17/08 10:59 PM      [4]
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Message	Content Analysis of message Anderson and Krathwohl
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S2 2/16/08 3:52 PM S7, I was having so much time wrapping my mind around the process of normalizing and identifying integrity issues that I didn't spend time on the tables. SO . . . I really appreciate your example of how to set them up. Thanks! I can now better envision the tables I would use for the publishing ERD. S2	Evaluate(critique)

S12 2/17/08 7:49 PM This looks like a more effective way of dealing with multiple branches of a library than the ERD. It looks like you were able to have some fun with it.	Evaluate(critique)
One thing that I noticed though is that the different tables are not connected by lines to show the relationships. I think they might need to be though I am not clear about any of this really. :)	Evaluate(critique)
S7 2/17/08 10:59 PM No, I don't think the tables have to be connected by lines, they are just tables after all. The ERD shows the relationship. S7	Understand(Explain)
S7 2/17/08 11:10 PM Here is part 2! After looking around, I decided that I needed to show my normalized ERD as well, not just the tables, so here it is. I am hoping that the ERD is in 2NF, but I am not sure. I tried to change the address fields to represent U.S. addresses: street, city, state, zip etc. I decided to keep Employee and Supervisor two different entities instead of creating a Super Entity of Employee to encompass both. So, this could be an integrity issue perhaps, but I am not sure.	Analyze(Organize)
S3 2/18/08 2:55 PM Because the employee and supervisor entities contain almost the exact same attributes, I think the supervisor entity could be changed to include one key difference.	Evaluate(critique)
Also, in regard to your tables and S12's post, in the book the tables have connecting lines to show the relationships.	Evaluate(critique)
I did not add them to my tables either. I agree that for this assignment and the limited space in Word, the ERD adequately shows the relationship.s	Analyze(differentiate)
S7 2/19/08 2:04 PM As far as database implementation is concerend, I don't think there would be any problems. I have still tried to keep everything as simple as possible, so I think implementation would work out well.	
Database integrity: Key integrity: Every table should have a primary key	Analyze(Organize)
Domain integrity: appropriate controls must be esigned to ensure that no field takes on an inappropriate value.	Analyze(Organize)
Referential Integrity: the assurance that a foreign key value in one table has a matching primary kep in the related table.	Understand(Explain)
I believe I addressed key integrity and referential integrity well enough in my other posts. I don't think I addressed domain integrity at all. It is something that I just "assume" to be there and therfore did not mention it. It is important to set the limits however to ensure that the data entered is in the correct format.	Evaluate(critique)
S16 2/18/08 5:15 PM I'm a little bit unclear on these tables. Who uses them? And when? Is this what a user sees when s/he looks up an item, or a person? Does all the related information come up? I think I had a different conception of how this would all work, but I'm not really sure how it's working altogether... help?	
S20 2/18/08 5:36 PM Hi S16 - Here's my understanding of it all, and hopefully it's right and it makes sense! I'll talk about in relation to a library.	

The ERD helps the library owners and users understand how all of the information kept in the library system relates to each other, and how people relate to the information, and how it's all stored.	Understand(Explain)
All of those relevant items - patron, book record, check-out - are all entities on the diagram.	
The tables are what you create when you want to see a list of information from the system. For example, I may be the manager of the library and want a list of all my staff and their file information (address, pay, SSN, etc.). So, I can request	Understand(Explain)
the system to create a "staff table" with all of those attributes as part of the table. I, the manager, use this staff information when I need to re-evaluate staffing at my branch (for example).	Analyze(Organize)
I, the librarian assistant, have been requested to make a list of all the books that are "lost," (which may be an entry for the "Status" attribute under "Book"). So, I request a table to be made by the system of all Book records that are marked "lost" under "status." I now have a useful table I can give to my boss. This wouldn't be possible if the system was not organized properly.	Analyze(Organize)
A patron would see the data kept on books and cds when they search. All those attributes - author, title, publisher – they can use to search in the information system. All that information needs to be kept in an organized system, so it can be searched for. That's why we organize the system with the ERD and not just put it in the computer all hodge-podge.	Understand(Explain)
Does that help at all? I hope I haven't confused you more. Or maybe someone needs to tell me I have it wrong! Thanks, S20	
S7 2/19/08 1:49 PM Great response to S16's question! Thank You for the great explanations! S7	Evaluate(critique)

8.10.17 Week 7 -Question 1-Thread 11 (Waters and Gasson)

ILL Process Context DFD   S2   2/21/08 10:10 PM   [1]
ILL Decomposition Diagram S2   2/22/08 8:42 PM   [2]
      RE: ILL Decomposition Diagram   S19   2/24/08 4:10 PM   [3]
            RE: ILL Decomposition Diagram   S2   2/24/08 5:23 PM   [4]
                  RE: ILL Decomposition Diagram   S19   2/24/08 11:10 PM   [5]
RE: ILL Process Context DFD   S2   2/24/08 7:25 PM   [6]
      RE: ILL Process Context DFD   S3   2/24/08 10:47 PM   [7]
      RE: ILL Process Context DFD   S7   2/25/08 12:29 PM   [8]
            RE: ILL Process Context DFD   S2   2/26/08 7:40 PM   [9]
RE: ILL Process Context DFD Revised   S2   2/26/08 9:17 PM   [10]

Message	Behavior Type
S2 2/21/08 10:10 PM Attached is my context DFD. I've shown the Data Flow as staff orders items for patrons in the library branch.	
Please bear with my shapes, since I couldn't seem to get the shapes changed to rounded-corner rectangles for the processes or open-ended boxes for the storage files. I'll revise this over the weekend. But, for now the shapes are: 1. Rectangles for external systems 2. Blue rectangles for processes; and 3. rectangles with a tab/line for data storage files	Contributor

The data flow in our ILL process is a bit more complicated than I've shown, and I'd like to streamline the process. This DFD should be really helpful in accomplishing that. I've already gotten some ideas on how to prevent us from duplicating searches, which is time-consuming. Any suggestions for revising the flow of my DFD will be appreciated. S2	P-K-E
S2 2/22/08 8:42 PM Attached is the Decomposition Diagram for my library Interlibrary Loan Process. This seemed more logical to me, maybe because it was more linear and seemed less confusing than the DFD.	Contributor
It was easy to model the steps of the process on Figure 9-16 of our text. (Whitten & Bentley, 341)	
I visualized the components or strands of data that needed to be a part of the ILL ordering process. 0 – is the overall ILL system; 1 -- the process begins with the request for an item by a patron; 2 -- the subsystems are the data file that staff keeps throughout the process, the item search subsystem, the patron search subsystem, and the actual ordering system; 3 -- this level contains the actual steps or processes that are performed to complete the whole ILL ordering process.	Contributor
It's helpful to see the different data areas and how they have to come together to complete an order for a patron. With several staff members participating in this throughout the process, it becomes a rather complicated task.	Complicator
At many points the process can break down or we can duplicate efforts. I think this model will help me find some more efficient ways to organize this process in the library branch. Unless I didn't understand the Decomposition Diagram, I think this was a pretty logical part of the data flow process to depict.	Contributor
	P-K-e
Feedback is very welcome! S2	
S19 2/24/08 4:10 PM S2, It's really refreshing to see something that's a little more easy for me to relate to!	
The only question I had about your decomposition diagram was--IF you're already within the system ILL, do you really need to have a box saying "send request to interlibrary loan department?" It just makes me wonder if your circulation department handles the patron's initial inquiry and then forwards the actual request tot he ILL department, etc.	Facilitator
Again..I'm just curious how other Intelibrary loan departments operate compared to my own. Thanks for your diagrams :)	p-k-e
S2 2/24/08 5:23 PM S19 thanks for your question. You're right, the initial request I'm describing is just at the branch level. Then we send requests to our interlibrary loan department if the item is not in our library system or in a neighboring district library with which we have daily delivery (those we can order directly).	Contributor
I'm reference librarian for a small branch. And the process can get kind of complicated. I'm trying to find a way to organize and simplify it, so this assignment is helpful. Since we try to have a 24-hour order turn-around, I'm trying to develop a simple system that will allow circulation desk staff to order items when I am unavailable. And given budget constraints and staff time, my manager wants as little duplication as possible. Easier said than done.	Contributor
How does your library organize interlibrary loan? S2	p-k-e
S19 2/24/08 11:10 PM I work for an academic library, so we don't have to confer with a main branch... I guess in that way it makes it a little easier.	Contributor
I've been the person running our ILL department for the past well I guess it's coming up on Five years this September.	Contributor

During the past five years we've evolved from doing a lot of things on paper to a lot more things electronically... We encourage our patrons to submit their requests online or through email whenever possible.	Contributor
There is still a lot of redundancy because peopel tend to be lazy or just don't realize how to look things up effectively.	Contributor
I certainly understand about budget constraints and use of staff time. Our institution is looking to cut costs wherever possible. It's very difficult for us (the library--I mean) because we moved into a brand new building this year and need more staff than we ever did before, and there's just not any fudning for it--so for now we all have to do the best we can with what we've got.	Contributor
I kind of have a hodge podge system going on right now. Instead of using a system that could be completely automated, like ILLiad, we use a combination of WorldCat Resource Sharing, email, and Odyssey standalone to meet our patron's needs.	Contributor
We just can't afford to invest in a product like ILLiad. In fact...I'm working on an interlibrary loan manual that will walk my student workers through the process of ordering and filling requests. It's very time consuming and very difficult to think of where to even begin!	Contributor
People at the circualtion desk are supposed to be checking the paper requests when they come in to make sure we don't have the item, or the journal article, and then forwarding it back to be processed by the ILL department. Most times, though, the circ people don't check (we have student workers taht are doing most of the work).	Contributor
I think one of the most difficult things here is that we service undergraduate students, some community people, graduate students and a small constituency of distance learners--such a large variety. Each group expects a different level of service.	Complicator
As involved as it is, I really love Interlibrary loan, and am glad that was the avenue that was opened up to me when I came aboard the library team here :). Are most of the things you request for your patrons held by other branches in your library system?	P-K-e
S2 2/24/08 7:25 PM Attached is my Interlibrary Loan Event Response List. Others had mentioned that they were confusing events and responses. I'm not sure I separated these perfectly, but I think I understand it better than I did this morning!	Contributor
The complicating factor in this example is that when the reference librarian (that's me) is gone, circulation staff need to complete the whole process. When the present, the request is routed to the reference librarian.	Complicator
The 24-hour order time we set for our staff requires everyone to be flexible and involved in the process. (I chose to diagram just the ordering process. Adding processing the items when they arrive, renewing items when requested, or notifying patrons when items can't be found would add a lot more to the complete diagrams.)	Contributor
The Event Response List seems to flow pretty naturally from the Decomposition DFD. Please send me your comments and suggestions for improvement, S2	P-K-e
S3 2/24/08 10:47 PM Nice work S2! All of your diagrams are well done very easy to understand. The event response list is good too. I like that you had multiple entries per external agent. That concept was challenging for me (in addition to the trigger/response).	Facilitator
It certainly seems that the ILL system would work well if this project were put into place. On a side note, I was interested to see your diagram because many years ago when I was in high school I visited the ILL office in the East Shore Area Library.	Facilitator

S7 2/25/08 12:29 PM Nice job S2! Can I ask you a question why you broke down the DFD to show both the "Dauphin County Library Catalog" and then the "District Library Catalog"? Is the district one level up (so to say) from the County Library? This comes from a person working at a stand alone Public Library (not a County System). Thanks, S7	Facilitator
S2 2/26/08 7:40 PM S7, I would describe the district library as "one level out" rather than one level up. Our library is a part of the Dauphin County Library System -- 8 branches. We can also request items from a neighboring library system in Cumberland County, within our public library district of 3 counties. We cooperate in many ways, and one is to exchange resources on a daily basis through delivery. So if an item isn't available in our system, we first search the district library system catalogs for an item, and can directly place holds. (Whereas, with broader ILL, our ILL department orders items for all libraries in our district.) Hope this makes sense. S2	Contributor Contributor
S2 2/26/08 9:17 PM Here is my revised Context DFD. It looks more like figure 9-15 (Whitten & Bentley, 340), but I'm not satisfied with all the flow descriptions. It's getting there. Any comments or suggestions are still welcome! S2	 Contributor p-k-e

8.10.18 Week 7 -Question 1-Thread 11 (Anderson & Krathwohl)

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ILL Process Context DFD     S2    2/21/08 10:10 PM                    [1]
ILL Decomposition Diagram S2    2/22/08 8:42 PM                       [2]
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RE: ILL Process Context DFD Revised   S2    2/26/08 9:17 PM          [10]
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Message	Content Analysis of message Anderson and Krathwohl
S2 2/21/08 10:10 PM Attached is my context DFD. I've shown the Data Flow as staff orders items for patrons in the library branch. Please bear with my shapes, since I couldn't seem to get the shapes changed to rounded-corner rectangles for the processes or open-ended boxes for the storage files. I'll revise this over the weekend. But, for now the shapes are: 1. Rectangles for external systems 2. Blue rectangles for processes; and 3. rectangles with a tab/line for data storage files	 Understand(Explain)
The data flow in our ILL process is a bit more complicated than I've shown, and I'd like to streamline the process. This DFD should be really helpful in accomplishing that. I've	Understand(Compare)

already gotten some ideas on how to prevent us from duplicating searches, which is time-consuming. Any suggestions for revising the flow of my DFD will be appreciated. S2	
S2 2/22/08 8:42 PM Attached is the Decomposition Diagram for my library Interlibrary Loan Process. This seemed more logical to me, maybe because it was more linear and seemed less confusing than the DFD. It was easy to model the steps of the process on Figure 9-16 of our text. (Whitten & Bentley, 341) I visualized the components or strands of data that needed to be a part of the ILL ordering process. 0 – is the overall ILL system; 1 -- the process begins with the request for an item by a patron; 2 -- the subsystems are the data file that staff keeps throughout the process, the item search subsystem, the patron search subsystem, and the actual ordering system; 3 -- this level contains the actual steps or processes that are performed to complete the whole ILL ordering process. It's helpful to see the different data areas and how they have to come together to complete an order for a patron. With several staff members participating in this throughout the process, it becomes a rather complicated task. At many points the process can break down or we can duplicate efforts. I think this model will help me find some more efficient ways to organize this process in the library branch. Unless I didn't understand the Decomposition Diagram, I think this was a pretty logical part of the data flow process to depict. Feedback is very welcome! S2	Understand(Explain) Apply(Execute) Apply(Execute) Evaluate(critique) Evaluate(critique)
S19 2/24/08 4:10 PM S2, It's really refreshing to see something that's a little more easy for me to relate to! The only question I had about your decomposition diagram was--IF you're already within the system ILL, do you really need to have a box saying "send request to interlibrary loan department?" It just makes me wonder if your circulation department handles the patron's initial inquiry and then forwards the actual request tot he ILL department, etc. Again..I'm just curious how other Intelibrary loan departments operate compared to my own. Thanks for your diagrams :)	Evaluate(critique)
S2 2/24/08 5:23 PM S19 thanks for your question. You're right, the initial request I'm describing is just at the branch level. Then we send requests to our interlibrary loan department if the item is not in our library system or in a neighboring district library with which we have daily delivery (those we can order directly). I'm reference librarian for a small branch. And the process can get kind of complicated. I'm trying to find a way to organize and simplify it, so this assignment is helpful. Since we try to have a 24-hour order turn-around, I'm trying to develop a simple system that will allow circulation desk staff to order items when I am unavailable. And given budget constraints and staff time, my manager wants as little duplication as possible. Easier said than done. How does your library organize interlibrary loan? S2	Understand(Explain) Understand(Exemplify)
S19 2/24/08 11:10 PM I work for an academic library, so we don't have to confer with a main branch... I guess in that way it makes it a little easier. I've been the person running our ILL department for the past well I guess it's coming up on Five years this September. During the past five years we've evolved from doing a lot of things on paper to a lot more things electronically... We encourage our patrons to submit their requests online or through email whenever possible.	Understand(Compare)

There is still a lot of redundency because peopel tend to be lazy or just don't realize how to look things up effectively.	Understand(Explain)
I certainly understand about budget constraints and use of staff time. Our institution is looking to cut costs wherever possible. It's very difficult for us (the library--I mean) because we moved into a brand new building this year and need more staff than we ever did before, and there's just not any fudning for it--so for now we all have to do the best we can with what we've got.	Understand(Compare)
I kind of have a hodge podge system going on right now. Instead of using a system that could be completely automated, like ILLiad, we use a combination of WorldCat Resource Sharing, email, and Odyssey standalone to meet our patron's needs.	Understand(Compare)
We just can't afford to invest in a product like ILLiad. In fact...I'm working on an interlibrary loan manual that will walk my student workers through the process of ordering and filling requests. It's very time consuming and very difficult to think of where to even begin!	Understand(Exemplify)
People at the circualtion desk are supposed to be checking the paper requests when they come in to make sure we don't have the item, or the journal article, and then forwarding it back to be processed by the ILL department. Most times, though, the circ people don't check (we have student workers taht are doing most of the work).	Understand(Exemplify)
I think one of the most difficult things here is that we service undergraduate students, some community people, graduate students and a small constituency of distance learners--such a large variety. Each group expects a different level of service.	Evaluate(critique)
As involved as it is, I really love Interlibrary loan, and am glad that was the avenue that was opened up to me when I came aboard the library team here :). Are most of the things you request for your patrons held by other branches in your library system?	
S2 2/24/08 7:25 PM Attached is my Interlibrary Loan Event Response List. Others had mentioned that they were confusing events and responses. I'm not sure I separated these perfectly, but I think I understand it better than I did this morning! The complicating factor in this example is that when the reference librarian (that's me) is gone, circulation staff need to complete the whole process. When the present, the request is routed to the reference librarian. The 24-hour order time we set for our staff requires everyone to be flexible and involved in the process. (I chose to diagram just the ordering process. Adding processing the items when they arrive, renewing items when requested, or notifying patrons when items can't be found would add a lot more to the complete diagrams.) The Event Response List seems to flow pretty naturally from the Decomposition DFD. Please send me your comments and suggestions for improvement, S2	Evaluate(critique)
S3 2/24/08 10:47 PM Nice work S2! All of your diagrams are well done very easy to understand. The event response list is good too. I like that you had multiple entries per external agent. That concept was challenging for me (in addition to the trigger/response).	Evaluate(critique)
It certainly seems that the ILL system would work well if this project were put into place. On a side note, I was interested to see your diagram because many years ago when I was in high school I visited the ILL office in the East Shore Area Library.	Evaluate(critique)
S7 2/25/08 12:29 PM	

Nice job S2! Can I ask you a question why you broke down the DFD to show both the "Dauphin County Library Catalog" and then the "District Library Catalog"? Is the district one level up (so to say) from the County Library? This comes from a person working at a stand alone Public Library (not a County System). Thanks, S7	Evaluate(Critique)
S2 2/26/08 7:40 PM S7, I would describe the district library as "one level out" rather than one level up. Our library is a part of the Dauphin County Library System -- 8 branches. We can also request items from a neighboring library system in Cumberland County, within our public library district of 3 counties.	Understand(Compare)
We cooperate in many ways, and one is to exchange resources on a daily basis through delivery. So if an item isn't available in our system, we first search the district library system catalogs for an item, and can directly place holds. (Whereas, with broader ILL, our ILL department orders items for all libraries in our district.) Hope this makes sense. S2	Understand(Explain)
S2 2/26/08 9:17 PM Here is my revised Context DFD. It looks more like figure 9-15 (Whitten & Bentley, 340), but I'm not satisfied with all the flow descriptions. It's getting there. Any comments or suggestions are still welcome! S2	

8.10.19 Week 2 -Question 1-Thread 22 (Waters and Gasson)

Agile methods S14 1/19/08 3:27 PM   [1]
    RE: Agile methods S21 1/19/08 8:09 PM   [2]
        RE: Agile methods S4 1/20/08 7:58 PM   [3]
    RE: Agile methods S3 1/19/08 8:48 PM   [4]
    RE: Agile methods S17 1/19/08 9:38 PM   [5]
    RE: Agile methods S1 1/20/08 3:02 PM   [6]
    RE: Agile methods S2 1/20/08 6:43 PM   [7]
        RE: Agile methods S14 1/20/08 8:27 PM   [8]
           RE: Agile methods S17 1/20/08 9:21 PM   [9]

Message	Behavior Type
S14 1/19/08 3:27 PM Are agile methods a "better way" to plan for and develop systems? To answer that, I needed to determine what sets agile development apart from non‑agile methods. I thought about where agile methods might be the best choice. These would be situations where there is a sense of urgency, where development time is especially important: "Our highest priority is to satisfy the customer through early and continuous delivery of valuable software (Beck, 2001)."	Facilitator
One of agile's strengths is that "agile processes harness change for the customer's competitive advantage (Beck, 2001)." My interest is librarianship. I don't see a rough‑and‑tumble business atmosphere in the world of library software development.	Contributor
Agile methods appear to be well matched to the automotive industry, other manufacturing entities, and commercial and logistics enterprises. There are many competitors in these industries, and that means that everyone is intent on gaining as much market share as they can.	Contributor

Library software, on the other hand, can be considered a "stable environment." Once the system is up and running, it may run for many years without requiring a programmer's attention.	Facilitator
Austin Riddle, of Texas A&M University, writes that agile processes are "Good for dynamic, but expensive for stable environments," and, "plan driven processes are good for stable, but expensive for dynamic processes (Riddle, 2008)." This makes sense to me, and I agree with it. However, James Shore, author of "The Art of Agile Development," disputes Riddle's position, which is espoused by Barry Boehm and Richard Turner in their book, Balancing Agility and Discipline: A Guide for the Perplexed. "They assume that up‑front design is more cost‑effective than continuous design when requirements are stable.	Complicator
My experience is that continuous design is more cost‑effective because it leads to more simpler, more innovative designs that allow features to be implemented more quickly (Shore, 2005).	Contributor
My conclusion is that agile software development may be well suited to most business purposes, but I haven't seen any clear advantage in the library field. References: Beck, K (2001). Principles behind the agile manifesto. Retrieved January 19, 2008, from Manifesto for Agile Software Development Web site: http://agilemanifesto.org/principles.html Riddle, Austin (2008). Agile Software Engineering. Retrieved January 19, 2008, from Agile Software Engineering Web site: http://courses.cs.tamu.edu/cpsc606/lively/AgileSoftwareEngineering.ppt] Shore, J (2005, April 4). Balancing Agility and Discipline. Retrieved January 19, 2008, from Successful Software Web site: http://jamesshore.com/Blog/Balancing%20Agility%20and%20Discipline.html	Closer
S21 1/19/08 8:09 PM I agree that there is no sense of urgency in a library setting. There isn't a mad rush to get a system out before other companies or anything like that.	Contributor
I do like how agile methods really involve the users, though, and I think that is important in a library setting where libraries are meant to serve their communities. If their patrons aren't satisfied with the system then they're not going to want to go to the library to use it.	Facilitator
I like the point that you make, though, that plan driven processes are for stable situations. I can see why that would give plan driven processes a good case to be used in libraries. I really couldn't see many positives for plan driven processes over agile methods, but you made good points on the advantages of both.	Vicarious-Acknowledger
S4 1/20/08 7:58 PM It is interesting that several of you do not see the 'urgency' in library software development. I see a library as a living organism which must adapt in order to survive. Agile software development is exactly what libraries need.	Complicator
Adaptive methods focus on adapting quickly to changing realities. www.agilealliance.com Librairies across the globe are having to rethink how they can best serve the public in the digital age due to quicly changing realities of how people use librairies. If they continue to rely on former methods of software development to promote and aide patron usage, their ability to adapt and survive may not keep up.	Complicator
S3 1/19/08 8:48 PM I agree that a library is a stable setting. However, I think there are times when agile methods are appropriate for overhauling a library's information system. As stated in the extreme programming powerpoint, with agile methods, it is possible to design different components of a system and use small releases of those features. In a library setting, I believe this is an advantage. By rolling out a completely new system, it could be overwhelming for the patrons and employees.	Complicator
S17 1/19/08 9:38 PM Hey S14,	

S17 here again. I agree with you that Agile methods may not bring any significant advantages in the library world.	Vicarious-Acknowledger
I argued that it may even not be practical in the long run. It may be too expensive and inflexible at the end.	Contributor
I also like James Shore, I quoted him and Shane Warden in my piece. Have a great weekend. S17	
S1 1/20/08 3:02 PM Hello S14: Great point about libraries being a stable environment. Thanks for the outside resource.	V-A
It seems to me that libraries probably aren't producing their own software. Most databases accessed by libraries are web-based so, really, the library only needs to install Internet Explorer or Mozilla Firefox. It's up to the subscription database to ensure that their materials are compatible with the searching methods that will be used by thier clients.	Complicator
As much as the agile methods are useful for learning things that need to be considered when developing an information system, I agree with you that they might not apply within the context where we will be employed. Have a terrific week. Respectfully, S1	Contributor
S2 1/20/08 6:43 PM I'm a little worried that everyone sees the library as a stable environment . . . 1. because this may mean I'm losing it 2. because I wonder if we're missing something 3. because I wonder if the library system I'm in is so "different"	Facilitator
I agree that in some ways we are not in the competitive, cut-throat business world. But if the role of the library and librarian/information specialist is important, and we don't feel that our information systems should constantly be keeping up with new needs and new technology, I think we may be missing some signs.	Facilitator
Our library struggles almost daily with information system issues -- compatibility of software, hardware and information systems, figuring out if we have the ability, mission and resources to deal with or integrate new technologies, etc. It doesn't seem stable at all. Am I missing or misunderstanding your points, here?	Facilitator
Are the libraries some of you are in or familiar with doing a better job of choosing information systems and keeping up with changing patron needs? Thanks for the discussion. S2	Facilitator
S14 1/20/08 8:27 PM Hi S2, Maybe I need to clarify things a bit. What I was trying to say was that the realm of large scale software development for libraries looks to me like it would be a stable environment, especially when you compare it to industries like automotive --where they are constantly adding, modifying, and retiring different models. In auto manufacturing I can see programmers constantly writing code for different ignition and engine management specifications, transmission control, antilock braking systems, etc... In library software development, the Dewey and Library of Congress classification systems don't change every 2 or 3 years, so no one has to write new code for the cataloging software the libraries use.	Facilitator
One of the things that drew me toward library work is that it is becoming more and more about the management of digital information. I agree with you that our systems should keep pace with new technology. I just don't see any situations where teams of programmers need to urgently crank out groundbreaking new code to keep up with changes in the way libraries are run.	Contributor
If you still disagree -- or anyone else in our class does -- please let me know. I'm certainly no expert in this field;-) S14	Facilitator

S17 1/20/08 9:21 PM Even if the library were competitive like the business world. Applying an agile method or taking the agile approach to solving the problems is likely to be extremely time consuming and probably more expensive because it will take a long time to finish the project.	Facilitator

8.10.20 Week 2 -Question 1-Thread 22 (Anderson & Krathwohl)

Agile methods S14 1/19/08 3:27 PM   [1]
    RE: Agile methods S21 1/19/08 8:09 PM   [2]
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One of agile's strengths is that "agile processes harness change for the customer's competitive advantage (Beck, 2001)."My interest is librarianship. I don't see a rough‑and‑tumble business atmosphere in the world of library software development.	Remember(Recall) Evaluate(critique)
Agile methods appear to be well matched to the automotive industry, other manufacturing entities, and commercial and logistics enterprises. There are many competitors in these industries, and that means that everyone is intent on gaining as much market share as they can.	Evaluate(critique)
Library software, on the other hand, can be considered a "stable environment." Once the system is up and running, it may run for many years without requiring a programmer's attention.	Evaluate(critique)
Austin Riddle, of Texas A&M University, writes that agile processes are "Good for dynamic, but expensive for stable environments," and, "plan driven processes are good for stable, but expensive for dynamic processes (Riddle, 2008)." This makes sense to me, and I agree with it. However, James Shore, author of "The Art of Agile Development," disputes Riddle's position, which is espoused by Barry Boehm and Richard Turner in their book, Balancing Agility and Discipline: A Guide for the Perplexed. "They assume that up‑front design is more cost‑effective than continuous design when requirements are stable.	Analyze (organize)
My experience is that continuous design is more cost‑effective because it leads to more simpler, more innovative designs that allow features to be implemented more quickly (Shore, 2005).	
My conclusion is that agile software development may be well suited to most business	

purposes, but I haven't seen any clear advantage in the library field.	Understand(exemplify)
References: Beck, K (2001). Principles behind the agile manifesto. Retrieved January 19, 2008, from Manifesto for Agile Software Development Web site: http://agilemanifesto.org/principles.html Riddle, Austin (2008). Agile Software Engineering. Retrieved January 19, 2008, from Agile Software Engineering Web site: http://courses.cs.tamu.edu/cpsc606/lively/AgileSoftwareEngineering.ppt] Shore, J (2005, April 4). Balancing Agility and Discipline. Retrieved January 19, 2008, from Successful Software Web site: http://jamesshore.com/Blog/Balancing%20Agility%20and%20Discipline.html	Create(Generate)
S21 1/19/08 8:09 PM I agree that there is no sense of urgency in a library setting. There isn't a mad rush to get a system out before other companies or anything like that.	Understand(compare)
I do like how agile methods really involve the users, though, and I think that is important in a library setting where libraries are meant to serve their communities. If their patrons aren't satisfied with the system then they're not going to want to go to the library to use it.	Evaluate(critique)
I like the point that you make, though, that plan driven processes are for stable situations. I can see why that would give plan driven processes a good case to be used in libraries. I really couldn't see many positives for plan driven processes over agile methods, but you made good points on the advantages of both.	Understand(exemplify)
S4 1/20/08 7:58 PM It is interesting that several of you do not see the 'urgency' in library software development. I see a library as a living organism which must adapt in order to survive. Agile software development is exactly what libraries need.	Understand(compare)
Adaptive methods focus on adapting quickly to changing realities. www.agilealliance.com Librairies across the globe are having to rethink how they can best serve the public in the digital age due to quicly changing realities of how people use librairies. If they continue to rely on former methods of software development to promote and aide patron usage, their ability to adapt and survive may not keep up.	Understand(exemplify)
S3 1/19/08 8:48 PM I agree that a library is a stable setting. However, I think there are times when agile methods are appropriate for overhauling a library's information system.	Understand(compare)
As stated in the extreme programming powerpoint, with agile methods, it is possible to design different components of a system and use small releases of those features. In a library setting, I believe this is an advantage. By rolling out a completely new system, it could be overwhelming for the patrons and employees.	Evaluate(critique)
S17 1/19/08 9:38 PM Hey S14, S17 here again. I agree with you that Agile methods may not bring any significant advantages in the library world. I argued that it may even not be practical in the long run. It may be too expensive and inflexible at the end.	Evaluate(critique)
I also like James Shore, I quoted him and Shane Warden in my piece. Have a great weekend. S17	
S1 1/20/08 3:02 PM Hello S14: Great point about libraries being a stable environment. Thanks for the outside resource. It seems to me that libraries probably aren't producing their own software. Most databases accessed by libraries are web-based so, really, the library only needs to install Internet Explorer or Mozilla Firefox. It's up to the subscription database to ensure that their materials are compatible with the searching methods that will be used by thier clients.	Understand(compare)
As much as the agile methods are useful for learning things that need to be considered when developing an information system, I agree with you that they might not apply within the context where we will be employed. Have a terrific week. Respectfully, S1	Understand(compare)

S2 1/20/08 6:43 PM I'm a little worried that everyone sees the library as a stable environment . . . 1. because this may mean I'm losing it 2. because I wonder if we're missing something 3. because I wonder if the library system I'm in is so "different" I agree that in some ways we are not in the competitive, cut-throat business world. But if the role of the library and librarian/information specialist is important, and we don't feel that our information systems should constantly be keeping up with new needs and new technology, I think we may be missing some signs.	Evaluate(critique)
Our library struggles almost daily with information system issues -- compatibility of software, hardware and information systems, figuring out if we have the ability, mission and resources to deal with or integrate new technologies, etc. It doesn't seem stable at all. Am I missing or misunderstanding your points, here?	Evaluate(critique)
Are the libraries some of you are in or familiar with doing a better job of choosing information systems and keeping up with changing patron needs? Thanks for the discussion. S2	
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One of the things that drew me toward library work is that it is becoming more and more about the management of digital information. I agree with you that our systems should keep pace with new technology. I just don't see any situations where teams of programmers need to urgently crank out groundbreaking new code to keep up with changes in the way libraries are run.	Understand(compare)
If you still disagree -- or anyone else in our class does -- please let me know. I'm certainly no expert in this field;-) S14	
S17 1/20/08 9:21 PM Even if the library were competitive like the business world. Applying an agile method or taking the agile approach to solving the problems is likely to be extremely time consuming and probably more expensive because it will take a long time to finish the project.	Evaluate(critique)

8.10.21 Week 2 -Question 1-Thread 5 (Waters and Gasson)

Message	Behavior Type
S21 1/16/08 1:24 PM I think overall that agile methods and extreme planning are a better way to plan and develop systems **although I am not quite sure how easy it is to actually follow the methodologies.** The philosphy of Extreme programming is to keep everything very simple with a small scope which would work in some cases but as Whittten and Bentley point out "complex problems may best be solved using more prescriptive approaches" (Whitten & Bentley, 2007, p.84).	Facilitator
So, in most cases I would say that agile methods would be more helpful, but, of course, there are acceptions. Not every system can be designed or fixed with a simple solution.	Contributor
The reason why I am leaning towards agile methods in the field of Library & Information Science is stated clearly on the Extreme Programming website. The methodology "emphasizes customer involvement and promotes team work" (extremeprogramming.org). In a library setting, the most important thing is the patrons. If the patrons are not satisfied with a system, then there is no point in having the system.	Contributor
A library's main purpose is to provide for the community, and this kind of methodology promotes small releases, testing and rapid feedback. If patrons aren't happy with the system, it can be changed before being fully implemented.	
One of the main concerns that I have with Extreme Programming is if it is actually feasible in its philosophy. Beck states, "They expect nothing. They can no longer be surprised," (XP Powerpoint, Slide 17). Is it really possible to go into a project expecting nothing? At the same time, it seems that people working with Extreme Programming are also taught to expect anything, anything that can change or go wrong.	Contributor
Other than these concerns with the wording of the policy, I think that overall, the methodology is better suited for Library and Information Science systems but not for all problems with all systems.	Facilitator
Whitten, J. L., & Bentley, L. D. (2007). Systems analysis & design method (7th ed.). New York: McGraw-Hill/Irwin.	
"Extreme Programming: A gentle introduction." (2007). Retrieved January 16, 2007 from www.extremeprogramming.org	Contributor
S8 1/17/08 1:49 PM Hi S21, I think that you hit the nail on the head with respect to the importance of involving the users to make certain that the system is designed to satisfy the needs of those end users.	V-A
I suspect that an important part of getting users involved from the inception is that if the ideas and concerns of the users are addressed in the design and implementation of the system, it means that the end users then feel as though they are "part" of the team, that is they may have "bought in" and therefore the chance of rejection for rejections sake is minimized.	Contributor
Everyone wants to feel important. One of the articles I reviewed (although more than 10 years old) discusses a "holistic" approach to systems design where the introduction of any change to a part of the system considers the effect on the system as a whole. Communication is a very important part of the process. (Walters et al. p.7).	Contributor
The importance of really listening and communicating can't be overemphasized. Walters, S.A., Broady,J.E. and Hartley, R.J. "A Review of Information Systems Development Technology"; Library Management 15:6 (5-19) 1994.	Contributor
S22 1/19/08 2:06 PM Hi S21, You touched on a subject that I jumped out at me while I was reading this week's readings and especially the XP PowerPoint slide 17, when Beck states, "They expect nothing. They can no longer be surprised." I, also thought - really? I would think that regardless of expecting nothing that you can always be surprised. There has to be something that you did not think of that did work or did not work –	Facilitator

pleasant or unpleasant. If you can no longer be surprised, aren't you settling into complacency with your extreme programming job or thinking you can end up solving any problem, and you have nothing left to discover? I don't know, the thought of no longer being surprised just didn't sit right with me. It seems like you would have to go into a project expecting some type of result otherwise what's the point. I'm probably making too much out of these two lone sentences – but I'll thow it out there! S22	Facilitator
S21 1/19/08 8:04 PM I completely agree with you. Those sentences just didn't sit right with me, either. I know they don't sum up the whole Extreme Programming method, but I also think that if you go into a project expecting nothing then how can you come up with anything?	V-A
S19 1/19/08 10:27 PM I noticed those lines too, but maybe I interpreted them differently. I was thinking more along the lines of, nothing that will crop up will hinder the effort in solving the problem at hand. In other words, an additional setback or issue may provide inspiration to make the system better. It could also be interpreted as someone remaining calm when others would rip their hair out in frustration.	Complicator
I picture an emergency room where extreme cases come in every second. You have the loved ones who are hysterical with worry and nervousness, yet the trained professionals possess a sense of calm and determination to get down to the bottom of the problem. Sometimes they are successful, sometimes they are not. I imagine that in XP, there are some cases that just can't be solved the way the user or the developer would like.	Contributor
S7 1/19/08 11:38 PM Beck states, "They expect nothing. They can no longer be surprised," Hello S21! I was wondering about the samee thing, how is it that they can no longer be surprised? **Does it mean every project is in flux the whole time they work on it? Someone is going to have some sort of expectations at some point. Or are we just thinking too linear?** S7	Facilitator
S7 1/19/08 11:42 PM I guess I should have read all the replies to S21's post before throwing in my 2 cents worth...:)	NULL
S22 1/20/08 4:02 AM S7 - At least we know there are a few of us thinking along the Same lines! S22	NULL
S18 1/20/08 11:13 PM The hardest part of this assignment was to relate it to library and information science. The way you stated was an ahhhhh moment for me. Libraries are there to serve the public and need immediate feedback to improve on their programs. Extreme Programming and agile methods are a better method then the classic methods.	V-A

8.10.22 Week 2 -Question 1-Thread 5 (Anderson & Krathwohl)

Agile Methods and Extreme Prog'ing S21 1/16/08 1:24 PM   [1]
        RE: Agile Methods and Extreme Prog'ing S8 1/17/08 1:49 PM   [2]
        RE: Agile Methods and Extreme Prog'ing S22 1/19/08 2:06 PM   [3]
            RE: Agile Methods and Extreme Prog'ing S21 1/19/08 8:04 PM   [4]
                RE: Agile Methods and Extreme Prog'ing S19 1/19/08 10:27 PM   [5]
        RE: Agile Methods and Extreme Prog'ing S7 1/19/08 11:38 PM   [6]
            RE: Agile Methods and Extreme Prog'ing S7 1/19/08 11:42 PM   [7]
                RE: Agile Methods and Extreme Prog'ing S22 1/20/08 4:02 AM   [8]
        RE: Agile Methods and Extreme Prog'ing S18 1/20/08 11:13 PM   [9]

Message	Content Analysis of message Anderson and Krathwohl
S21 1/16/08 1:24 PM I think overall that agile methods and extreme planning are a better way to plan and develop systems **although I am not quite sure how easy it is to actually follow the methodologies.** The philosphy of Extreme programming is to keep everything very simple with a small scope which would work in some cases but as Whittten and Bentley point out "complex problems may best be solved using more prescriptive approaches" (Whitten & Bentley, 2007, p.84).	Understand(Summarize)
So, in most cases I would say that agile methods would be more helpful, but, of course, there are acceptions. Not every system can be designed or fixed with a simple solution.	Evaluate(critique)
The reason why I am leaning towards agile methods in the field of Library & Information Science is stated clearly on the Extreme Programming website. The methodology "emphasizes customer involvement and promotes team work" (extremeprogramming.org). In a library setting, the most important thing is the patrons. If the patrons are not satisfied with a system, then there is no point in having the system.	Understand(Compare)
A library's main purpose is to provide for the community, and this kind of methodology promotes small releases, testing and rapid feedback. If patrons aren't happy with the system, it can be changed before being fully implemented.	
One of the main concerns that I have with Extreme Programming is if it is actually feasible in its philosophy. Beck states, "They expect nothing. They can no longer be surprised," (XP Powerpoint, Slide 17). Is it really possible to go into a project expecting nothing? At the same time, it seems that people working with Extreme Programming are also taught to expect anything, anything that can change or go wrong.	Understand(compare)
Other than these concerns with the wording of the policy, I think that **overall, the methodology is better suited for Library and Information Science systems but not for all problems with all systems.** Whitten, J. L., & Bentley, L. D. (2007). Systems analysis & design method (7th ed.). New York: McGraw-Hill/Irwin. "Extreme Programming: A gentle introduction." (2007). Retrieved January 16, 2007 from www.extremeprogramming.org	Evaluate(critique) Understand(Summarize)
S8 1/17/08 1:49 PM Hi S21, I think that you hit the nail on the head with respect to the importance of involving the users to make certain that the system is designed to satisfy the needs of those end users.	Understand(Summarize)
I suspect that an important part of getting users involved from the inception is that **if the ideas and concerns of the users are addressed in the design and implementation of the system, it means that the end users then feel as though they are "part" of the team, that is they may have "bought in" and therefore the chance of rejection for rejections sake is minimized**.	Understand(Explain) – cause and effect model
Everyone wants to feel important. One of the articles I reviewed (although more than 10 years old) **discusses a "holistic" approach to systems design where the introduction of any change to a part of the system considers the effect on the system as a whole**. Communication is a very important part of the process. (Walters et al. p.7).	
The importance of really listening and communicating can't be overemphasized. Walters, S.A., Broady,J.E. and Hartley, R.J. "A Review of Information Systems Development Technology"; Library Management 15:6 (5-19) 1994.	Understand(exemplify)
S22 1/19/08 2:06 PM Hi S21, You touched on a subject that I jumped out at me while I was reading this week's readings and especially the XP PowerPoint slide 17, when Beck states, "They expect	

nothing. They can no longer be surprised." I, also thought **- really? I would think that regardless of expecting nothing that you can always be surprised. There has to be something that you did not think of that did work or did not work –pleasant or unpleasant**. If you can no longer be surprised, aren't you settling into complacency with your extreme programming job or thinking you can end up solving any problem, and you have nothing left to discover?	Evaluate(critique)
I don't know, the thought of no longer being surprised just didn't sit right with me. It seems like you would have to go into a project expecting some type of result otherwise what's the point. I'm probably making too much out of these two lone sentences – but I'll thow it out there! S22	Evaluate (Critique)
S21 1/19/08 8:04 PM I completely agree with you. Those sentences just didn't sit right with me, either. I know they don't sum up the whole Extreme Programming method, but I also think that if you go into a project expecting nothing then how can you come up with anything?	Evaluate(critique)
S19 1/19/08 10:27 PM I noticed those lines too, but maybe I interpreted them differently. I was thinking more along the lines of, nothing that will crop up will hinder the effort in solving the problem at hand. In other words, an additional setback or issue may provide inspiration to make the system better. It could also be interpreted as someone remaining calm when others would rip their hair out in frustration.	Understand(Interpret)
I picture an emergency room where extreme cases come in every second. You have the loved ones who are hysterical with worry and nervousness, yet the trained professionals possess a sense of calm and determination to get down to the bottom of the problem. Sometimes they are successful, sometimes they are not. I imagine that in XP, there are some cases that just can't be solved the way the user or the developer would like.	Understand(Compare)
S7 1/19/08 11:38 PM Beck states, "They expect nothing. They can no longer be surprised," Hello S21! I was wondering about the samee thing, how is it that they can no longer be surprised? **Does it mean every project is in flux the whole time they work on it? Someone is going to have some sort of expectations at some point. Or are we just thinking too linear?** S7	Evaluate(critique)
S7 1/19/08 11:42 PM I guess I should have read all the replies to S21's post before throwing in my 2 cents worth...:)	Null
S22 1/20/08 4:02 AM S7 - At least we know there are a few of us thinking along the Same lines! S22	Null
S18 1/20/08 11:13 PM The hardest part of this assignment was to relate it to library and information science. The way you stated was an ahhhhh moment for me. Libraries are there to serve the public and need immediate feedback to improve on their programs. Extreme Programming and agile methods are a better method then the classic methods.	Understand(Compare)

8.10.23 Week 5 -Question 1-Thread 8 (Waters and Gasson)

Message	Behavior Type
S2 2/8/08 9:05 PM I chose the Publisher Printing ERD. I was able to add some of the notation, but I will definitely have to tweak my ERD a lot. I was unable to get a circle on the lines between text blocks to indicate "zero, one or more". I think most relationships should be this notation.	Contributor
I will be away all day tomorrow, so I'm submitting my ERD as well as I could get it tonight. I'll work on it till Wednesday, and suggestions will definitely be welcome. Anyway, here it is . . .Looking forward to seeing everyone else's ERD! S2	Null P-K-E
S6 2/8/08 11:40 PM S2, Your ERD was very well done. I especially like the way your wrote the action verb on the line to show the relationship. I think that makes the whole thing easier to take in. Yours had a lot of detail but somehow came across simple and easy to understand. Nice job. S6	V-A
S10 2/9/08 9:18 PM Hi S2, I think this is a hard project description because it has so many variables. (Multiple POs for multiple materials, multiple employees) I think it's hard to organize the cardinality, so my hat's off to you for trying. :)	Contributor
I think you may want to switch the Book Publisher to one because wouldn't there only be One Book Publisher for each instance of request/order? I'm not sure. Anyway, good job. S10	Facilitator
S2 2/10/08 7:37 PM Thanks, S10, for the suggestion to change the Book Publisher to one. I think you're right about that. I got myself a bit confused about whether the number was an "overall" count or a "relationship" count. There were others I think I may have had wrong, too.	V-A
I'll have to check it over more closely. I found by Friday night I was just glad to get something on paper that had most of the elements! S2	Null
S8 2/10/08 11:28 AM Hi S2, I looked at this one and the description seemed very complex. I certainly understand the issue of time constraints as well. **You solved the cardinality problem. I was confused when I read this problem as I didn't know whether or not the Print Manager and the Additional Employees were subsets of employees of the publisher pritning company.**	V-A
The way in which you handled the multiple purchase orders was helpful to me in revising my customer order entry diagram since I didn't receive direct comments on my post. Excellent job on the initial diagram. S8	V-A
S2 2/10/08 7:42 PM S8, Thanks for your comments! I was confused by what to do with the Print Manager and the additional employees, too. I'm not sure I solved it in the best way. **At first I had all employees together, but I realized that wouldn't work. Making them two entities seemed clearer, but I think I'm still missing some elements.** (S2) S2	Facilitator
S4 2/10/08 7:59 PM This is really impressive. You obviously have a much greater grasp of this assignment than I do. This was quite confusing.	V-A
S2 2/13/08 9:33 AM Thanks, S4. But I think it's confusing, too. I still think I'm missing some elements and relationships. I want to read a bit more today and try to revise it. I tried to look at your ERD but noted that someone else couldn't read it. I'll look at it tonight. This is definitely a project it would be good to work on in teams! S2	Facilitator
S15 2/13/08 6:11 PM I agree that this project would be best tackled as a team effort. There are so many parts to	

| this assignment that I feel like I am missing a lot. | V-A |
| As a team we could work together to check each others work and bring new ideas to the ERD. | Contributor |

8.10.24 Week 5 -Question 1-Thread 8 (Anderson & Krathwohl)

Publisher Printing ERD S2 2/8/08 9:05 PM   [1]
    RE: Publisher Printing ERD S6 2/8/08 11:40 PM   [2]
        RE: Publisher Printing ERD S10 2/9/08 9:18 PM   [3]
            RE: Publisher Printing ERD S2 2/10/08 7:37 PM   [4]
    RE: Publisher Printing ERD S8 2/10/08 11:28 AM   [5]
        RE: Publisher Printing ERD S2 2/10/08 7:42 PM   [6]
    RE: Publisher Printing ERD S4 2/10/08 7:59 PM   [7]
        RE: Publisher Printing ERD S2 2/13/08 9:33 AM   [8]
            RE: Publisher Printing ERD S15 2/13/08 6:11 PM   [9]

Message	Content Analysis of message Anderson and Krathwohl
S2 2/8/08 9:05 PM I chose the Publisher Printing ERD. I was able to add some of the notation, but I will definitely have to tweak my ERD a lot. I was unable to get a circle on the lines between text blocks to indicate "zero, one or more". I think most relationships should be this notation.	Evaluate(Critique)
I will be away all day tomorrow, so I'm submitting my ERD as well as I could get it tonight. I'll work on it till Wednesday,	Null
and suggestions will definitely be welcome. Anyway, here it is . . .Looking forward to seeing everyone else's ERD! S2	null
S6 2/8/08 11:40 PM S2, Your ERD was very well done. I especially like **the way your wrote the action verb on the line to show the relationship**. I think that makes the whole thing easier to take in. Yours had a lot of detail but somehow came across simple and easy to understand. Nice job. S6	Understand(Interpret)
S10 2/9/08 9:18 PM Hi S2, I think this is a hard project description because it has so many variables. (Multiple POs for multiple materials, multiple employees) I think it's hard to organize the cardinality, so my hat's off to you for trying. :)	Understand(Compare)
I **think you may want to switch the Book Publisher to one because wouldn't there only be One Book Publisher for each instance of request/order?** I'm not sure. Anyway, good job. S10	Apply(Implement)
S2 2/10/08 7:37 PM Thanks, S10, for the suggestion to change the Book Publisher to one. I think you're right about that. I got myself a bit confused about whether the number was an "overall" count or a "relationship" count. There were others I think I may have had wrong, too.	Understand(Compare)
I'll have to check it over more closely. I found by Friday night I was just glad to get something on paper that had most of the elements! S2	Null
S8 2/10/08 11:28 AM Hi S2, I looked at this one and the description seemed very complex. I certainly understand the	

Message	Behavior Type
issue of time constraints as well. **You solved the cardinality problem. I was confused when I read this problem as I didn't know whether or not the Print Manager and the Additional Employees were subsets of employees** of the publisher pritning company.	Evaluate(critique)
The way in which you handled the multiple purchase orders was helpful to me in revising my customer order entry diagram since I didn't receive direct comments on my post. Excellent job on the initial diagram. S8	Understand(Compare)
S2 2/10/08 7:42 PM S8, Thanks for your comments! I was confused by what to do with the Print Manager and the additional employees, too. I'm not sure I solved it in the best way. At first I had all employees together, but I realized that wouldn't work. Making them two entities seemed clearer, but I think I'm still missing some elements. (S2) S2	evaluate(Checking)
S4 2/10/08 7:59 PM This is really impressive. You obviously have a much greater grasp of this assignment than I do. This was quite confusing.	Null
S2 2/13/08 9:33 AM Thanks, S4. But I think it's confusing, too. I still think I'm missing some elements and relationships. I want to read a bit more today and try to revise it. I tried to look at your ERD but noted that someone else couldn't read it. I'll look at it tonight. This is definitely a project it would be good to work on in teams! S2	Evaluate(Critique)
S15 2/13/08 6:11 PM I agree that this project would be best tackled as a team effort. There are so many parts to this assignment that I feel like I am missing a lot. As a team we could work together to check each others work and bring new ideas to the ERD.	Create(Plan)

8.10.25 Week 5 -Question 1-Thread 4 (Waters and Gasson)

County Library ERD S7 2/8/08 4:42 PM   [1]
    RE: County Library ERD S20 2/9/08 12:51 PM   [2]
       RE: County Library ERD S7 2/11/08 11:32 AM   [3]
          RE: County Library ERD S20 2/12/08 9:36 AM   [4]
    RE: County Library ERD S14 2/10/08 9:06 PM   [5]
       RE: County Library ERD S19 2/10/08 9:55 PM   [6]
          RE: County Library ERD S14 2/10/08 10:34 PM   [7]
             RE: County Library ERD S20 2/11/08 7:21 AM   [8]
    RE: County Library ERD S7 2/11/08 11:36 AM   [9]

Message	Behavior Type
S7 2/8/08 4:42 PM Hello all! Here is my attempt at the County Library ERD. I tried to keep it as simple as possible and **I am hoping that I didn't simplify it too much and therefore forgot important things**....I also used Word, please let me know if you can't read it....S7	P-K-E
S20 2/9/08 12:51 PM S7- I like how you included "years managing" for one of the manager's attributes. That's handy information! I was way impressed by how you used foreign keys.	V-A
I didn't really understand that bit in our text. How did you know where to put them? Thanks, S20	(Facilitator)
S7 2/11/08 11:32 AM Hi S20! In your post on 2/9/08 I think you confused me with S9's ERD. I did not use "years Managing" in my ERD. I also didn't use foreign keys. **The diamonds (if that's what you**	

are referring to) are used to show the relationship between the enitities. S7	Contributor
S20 2/12/08 9:36 AM Oops! Sorry about that. Too many open at a time. :-)	Null
S14 2/10/08 9:06 PM slightly revised: ERD2	Null
S19 2/10/08 9:55 PM S14, I think in a library, that the 'people' to employee relationship is very important. Although employees could function without the patrons, patrons provide a great deal of meaninful work for the employees to do, therefore I think the patron/employee interactions are very pertinant. In other words, without the patron participation in the mix, there wouldn't really be a reason to have the branch libraries in the first place (at least that's how I see it). S19	Facilitator
S14 2/10/08 10:34 PM S19, I understand the importance of the relationship between library employees and patrons. What I am questioning is whether it is germane to the structure of a computer database. Perhaps I wasn't clear on that. S14	Facilitator
S20 2/11/08 7:21 AM S14 - I put the relationship between employees and patrons on my ERD, too. Employees do a lot of database searching, they process membership requests, they track the status of the patrons, etc. So I guess a lot of the interaction employees have with the database are because of interaction with the patrons.	Facilitator
Your thinking makes sense to me... how would you map that out? Does it impact the structure of the information system? I think it would, as a library is a user-centered institution. I'm not sure exactly how it would impact it, though.	Facilitator
Perhaps a "search" entity or a "membership request form" entity? It gets really complex! S20.	Facilitator
S7 2/11/08 11:36 AM Thanks S14! I put the "people" relationship in there because a lot of data gets transferred through that relationship.	Facilitator
Maybe I should have named the relationship something else, but I couldn't think of another term to put in there. This is from a non-Techie mind you! S7	

8.10.26 Week 5 -Question 1-Thread 4 (Anderson & Krathwohl)

County Library ERD S7 2/8/08 4:42 PM   [1]
    RE: County Library ERD S20 2/9/08 12:51 PM   [2]
        RE: County Library ERD S7 2/11/08 11:32 AM   [3]
            RE: County Library ERD S20 2/12/08 9:36 AM   [4]
    RE: County Library ERD S14 2/10/08 9:06 PM   [5]
        RE: County Library ERD S19 2/10/08 9:55 PM   [6]
            RE: County Library ERD S14 2/10/08 10:34 PM   [7]
                RE: County Library ERD S20 2/11/08 7:21 AM   [8]
        RE: County Library ERD S7 2/11/08 11:36 AM   [9]

Message	Content Analysis of message Anderson and Krathwohl
S7 2/8/08 4:42 PM	

Hello all! Here is my attempt at the County Library ERD. I tried to keep it as simple as possible and I am hoping that I didn't simplify it too much and therefore forgot important things....I also used Word, please let me know if you can't read it....S7	Null
S20 2/9/08 12:51 PM S7- I like how you included "years managing" for one of the manager's attributes. That's handy information! I was way impressed by how you used foreign keys. I didn't really understand that bit in our text. How did you know where to put them? Thanks, S20	Evaluate(critique)
S7 2/11/08 11:32 AM Hi S20! In your post on 2/9/08 I think you confused me with S9's ERD. I did not use "years Managing" in my ERD. I also didn't use foreign keys. **The diamonds (if that's what you are referring to) are used to show the relationship between the enitities**. S7	Understand(Interpret)
S20 2/12/08 9:36 AM Oops! Sorry about that. Too many open at a time. :-)	Null
S14 2/10/08 9:06 PM slightly revised: ERD2	Null
S19 2/10/08 9:55 PM S14, I think in a library, that the 'people' to employee relationship is very important. Although employees could function without the patrons, patrons provide a great deal of meaninful work for the employees to do, therefore I think the patron/employee interactions are very pertinant. In other words, without the patron participation in the mix, there wouldn't really be a reason to have the branch libraries in the first place (at least that's how I see it). S19	Evaluate(critique)
S14 2/10/08 10:34 PM S19, I understand the importance of the relationship between library employees and patrons. What I am questioning is whether it is germane to the structure of a computer database. Perhaps I wasn't clear on that. S14	Evaluate(checking)
S20 2/11/08 7:21 AM S14 - I put the relationship between employees and patrons on my ERD, too. Employees do a lot of database searching, they process membership requests, they track the status of the patrons, etc. **So I guess a lot of the interaction employees have with the database are because of interaction with the patrons.** Your thinking makes sense to me... how would you map that out? Does it impact the structure of the information system? I think it would, as a library is a user-centered institution. I'm not sure exactly how it would impact it, though. **Perhaps a "search" entity or a "membership request form" entity? It gets really complex**! S20.	Understand(Explain) Evaluate(critique) Create(generate)
S7 2/11/08 11:36 AM Thanks S14! I put the "people" relationship in there because a lot of data gets transferred through that relationship. **Maybe I should have named the relationship something else, but I couldn't think of another term to put in there. This is from** a non-Techie mind you! S7	Understand(explain) Evaluate(critique)

8.10.27 Week 5 -Question 1-Thread 12 (Waters and Gasson)

Message	Behavior Type
S12 2/9/08 11:08 AM McCue - ERD I worked very hard on this, yet I am not sure that I have absorbed all the necessary components. Please point out anything that I may have left out or gotten wrong. Thanks, S12	 P-K-E
S12 2/9/08 11:12 AM McCue – ERD Sorry, this one is just the diagram!	 Null
S20 2/9/08 12:47 PM I have a question... why did you make the box around the library branch information blue? I looked through the reading a lot to figure out how to do the phrases between the entities. I found a part in the text, p.275, where the authors state, "all relationships are implicitly bidirectional, meaning they can be interpreted in both directions." So I took that to mean we didn't have to put a whole sentence in to define which direction to read the diagram. Did you find something else that I didn't? Thanks, S20	 Facilitator Facilitator P-K-E
S12 2/9/08 3:48 PM I am not sure why one box turned out blue. I tried to explain the relationship in the text boxes, ie what one entity does with another, not necesarily the direction.	 Contributor
S10 2/9/08 9:40 PM S12, I can tell how hard you worked on this. It's so frustrating isn't? Tyring to get everything in, but simplify at the same time. I noticed something that might help. I think you have more Relationship lines than necessary. For instance, I'm not sure that you need a line between Library Employees and Other Branch Employee. Im not sure there really is a relationship there. Also, I'm not sure that you need both Library Employees and Other Branch Employee as Entities. Wouldn't the Job Description attribute distinguish what type of employee the person is? If you combined those entities completely it might give you more room to play with to make it all a little more clear. You might also be able to use some Generalization for the different materials (books, Cds, etc..) I'm not sure, but check out p.284. Good job though. Great detail! S10	 Facilitator Facilitator
S13 2/10/08 6:45 PM I wasn't sure if we were to explicitly state the relationships, but as I was reviewing your diagram it helped me grasp the concept more easily. At first, all the different lines were confusing but your mini-explanations were a great reference.	 V-A
S12 2/12/08 11:01 PM ERD II Thank you all for your input. I simplified the model just a little bit.	 Null
S1 2/13/08 3:20 PM	

Hello S12: That is one impressive diagram. You can tell that you put a lot of work into that. I was very impressed by how you included the information on the book publishers and suppliers. I only used that information to indicate how material might be cataloged and recalled. I never thought to include the relationship between the actual publishers and suppliers.	V-A
The boxes with the explanatory information go a long way in making the diagram digestable. Nice work. Very Respectfully, S1	V-A
S12 2/17/08 5:20 PM ERD III - McCue Hi guys, Thanks for all your helpful input, but when I went to normalize my ERD I realized that I had to redo it. :-o S12	Null

8.10.28 Week 5 -Question 1-Thread 12 (Anderson & Krathwohl)

Cnty Lib System S12 2/9/08 11:08 AM   [1]
      RE: Cnty Lib System S12 2/9/08 11:12 AM   [2]
          RE: Cnty Lib System S20 2/9/08 12:47 PM   [3]
             RE: Cnty Lib System S12 2/9/08 3:48 PM   [4]
                RE: Cnty Lib System S10 2/9/08 9:40 PM   [5]
                   RE: Cnty Lib System S13 2/10/08 6:45 PM   [6]
                      RE: Cnty Lib System S12 2/12/08 11:01 PM   [7]
                         RE: Cnty Lib System S1 2/13/08 3:20 PM   [8]
                            RE: Cnty Lib System S12 2/17/08 5:20 PM   [9]

Message	Content Analysis of message Anderson and Krathwohl
S12 2/9/08 11:08 AM McCue - ERD I worked very hard on this, yet I am not sure that I have absorbed all the necessary components. Please point out anything that I may have left out or gotten wrong. Thanks, S12	Null
S12 2/9/08 11:12 AM McCue - ERD Sorry, this one is just the diagram!	Null
S20 2/9/08 12:47 PM I have a question... why did you make the box around the library branch information blue?	Evaluate(critique)
I looked through the reading a lot to figure out how to do the phrases between the entities. I found a part in the text, p.275, where the authors state, "all relationships are implicitly bidirectional, meaning they can be interpreted in both directions." So I took that to mean we didn't have to put a whole sentence in to define which direction to read the diagram. Did you find something else that I didn't? Thanks, S20	Evaluate(critique)
S12 2/9/08 3:48 PM I am not sure why one box turned out blue. I tried to explain the relationship in the text boxes, ie what one entity does with another, not necesarily the direction.	Understand(explain)
S10 2/9/08 9:40 PM S12, I can tell how hard you worked on this. It's so frustrating isn't? Tyring to get everything in, but simplify at the same time. I noticed something that might help. I think you have more Relationship lines than necessary.	Evaluate(critique)

For instance, I'm not sure that you need a line between Library Employees and Other Branch Employee. Im not sure there really is a relationship there. Also, I'm not sure that you need both Library Employees and Other Branch Employee as Entities. Wouldn't the Job Description attribute distinguish what type of employee the person is? If you combined those entities completely it might give you more room to play with to make it all a little more clear. You might also be able to use some Generalization for the different materials (books, Cds, etc..) I'm not sure, but check out p.284. Good job though. Great detail! S10	Evaluate(critique)
S13 2/10/08 6:45 PM I wasn't sure if we were to explicitly state the relationships, but as I was reviewing your diagram it helped me grasp the concept more easily. At first, all the different lines were confusing but your mini-explanations were a great reference.	Analyze(differentiate)
S12 2/12/08 11:01 PM ERD II Thank you all for your input. I simplified the model just a little bit.	Null
S1 2/13/08 3:20 PM Hello S12: That is one impressive diagram. You can tell that you put a lot of work into that. I was very impressed by how you included the information on the book publishers and suppliers**. I only used that information to indicate how material might be cataloged and recalled.** I never thought to include the relationship between the actual publishers and suppliers. The boxes with the explanatory information go a long way in making the diagram digestable. Nice work. Very Respectfully, S1	Understand(compare) Evaluate(critique)
S12 2/17/08 5:20 PM ERD III - McCue Hi guys, Thanks for all your helpful input, but when I went to normalize my ERD I realized that I had to redo it. :-o S12	Understand(compare)

8.11 Analysis of High message threads

	Week	Question	Thread	MESSAGES	depth	participants
15	3	2	8	8	2	8
16	9	1	2	8	2	8
17	1	2	4	8	3	7
18	2	2	15	8	3	7
19	4	1	3	8	6	5
20	10	1	6	7	3	7
21	7	1	9	7	6	4
22	7	1	14	6	5	3

8.11.1 Week 3-Question 2 Thread 8 (Waters and Gasson)

Online Catalogue Folksonomy S12 1/24/08 2:12 PM   [1]
    RE: Online Catalogue Folksonomy S1 1/24/08 8:24 PM   [2]
    RE: Online Catalogue Folksonomy S7 1/26/08 4:12 PM   [3]
    RE: Online Catalogue Folksonomy S15 1/26/08 4:59 PM   [4]
    RE: Online Catalogue Folksonomy S19 1/26/08 11:00 PM   [5]
    RE: Online Catalogue Folksonomy S16 1/27/08 10:54 AM   [6]
    RE: Online Catalogue Folksonomy S4 1/27/08 5:22 PM   [7]
    RE: Online Catalogue Folksonomy S22 1/27/08 7:23 PM   [8]

Message	Behavior Type
S12 1/24/08 2:12 PM Note: The project that I have outlined is not based on my own experience as librarian, as I have yet to work in a library. It is based on readings and discussions with librarians and information scientists. Therefore, there may be many issues that I have not considered, particularly when it comes to the technical aspects of information systems.	Contributor
Goals: The goal of the project is to include the patrons of the library in categorizing materials in the library's online catalogue through folksonomy, or user created tagging. The overriding goal is to get even more information to the library patrons.	Contributor
Objectives: Users would be able to choose tags, or words describing the materials they have checked out. This would add a new dimension to the cross referencing already done by the library staff. This could make information more accessible to the public because they are able to describe the information themselves and create connections the staff may not have considered.	Contributor
Scope: The systems analyst (which from what I am told is usually either a staff member such as the systems librarian or someone from an outside firm hired to do the job) would work with management, the staff, and a sample of the customer base to weigh the benefits and decide precisely what the system needs to do. Then the systems analyst works with the designers and builders to figure out how to create the system. The scope definition phase includes the following:	
First they would "identify baseline problems and opportunities" (Whitten & Bentley, pg. 167). They would consider such problems as misspellings and inappropriate language.	Contributor
Second, they consider the limits of the project in terms of urgency, visibility, benefits, priority, and possible solutions to any problems or opportunities (Whitten & Bentley, pg. 171-2). They might consider problem solving components such as a built in spell check, forbidden words & phrases, and flagging for problems or mis-use.	Contributor
Third, is to negotiate baseline scope, or decide what ultimately will be included in the project and what will not.	Contributor
Fourth, they decide if the project is worthwhile. They may find that the project is extremely worthwhile in that it leads to the main objective of any library, which is	contributor
getting more information to the patron. The schedule and budget are then established,	Contributor
and lastly the project plan is submitted for approval (Whitten & Bentley, pg. 172-4).	
S1 1/24/08 8:24 PM Hello S12: You have posted a really neat idea. I wonder whether the "folkonomy" from one area of the country will differ from that of other regions?	P-K-E
Once all of these various folksonomies are created, some information scientist can do a	

study on information describing behavior of library patrons from various regions of the country. Maybe that information scientist will be you :)	Contributor
My expectation is that the project would be done electronically, i.e. that the online computer library catalog could have a specific folksonomy subject headings provided by the patrons. It would seem to me that the original subject headings would remain the same and that the folksonomy headings would only serve to improve access.	Facilitator
I think you are right to prevent certain kinds of descriptions and I wonder if there is some kind of software akin to internet site blocking software, similiar to that used to prevent children's access to pornography, that could be altered to prevent the use of certain nomenclature. If lewd and lascivious nomenclature was allowed, pre teenage boys would implment the language in the taxonomy just to do it.	Contributor
Another possibility would be some kind of card swiping technology, where a person would have to swipe their library card in order to make an addition. **Some people may be concerned with their privacy, however, so there might be some protect if the folksonomy subject headings could be traced to particular users.**	
Good luck with your project. Have a terrific weekend. Best Regards, Very Respectfully, S1	facilitator
S7 1/26/08 4:12 PM Hello S12! This idea sounds really interesting, but I have never heard of it. Where did you find information on "folksonomy". Is there a link that you could provide on how to find the information?	P-K-E
I just can't seem to wrap my head around how this whole thing seems to work. For example, I don't know what you mean by "cross referencing already done by the library staff". Thanks, S7	Facilitator
S15 1/26/08 4:59 PM What an interesting idea, this would allow the users to come up with their own descriptors of a book or maybe even movies or music. It would also add an interesting spin for people who might like to browse the catalog using the folksonomy.	Facilitator
S19 1/26/08 11:00 PM I too really like this idea. As we've seen in many of the postings, we all relate to things a different way. One person might categorize what they've read completely different than waht someone else may.	Contributor
This idea reminds me of the concept of "Library Thing". It allows library users to network and create lists of books they read and descriptions (they call them user tags). http://www.librarything.com/	Facilitator
I was thinking about even going a step further and perhaps incorporating reviews about the books into the online catalog as well. People who have read the book could give a short synopsis of what they thought.	Facilitator
My public library has a system like this, except the tape papers in the back of the book on which people write their comments. The electronic aspect would allow people to write and have it be preserved overtime where as these little papers would come out.	Contributor
S1 also brought up some important ideas about privacy and confidentiality and just basic seriousness in posting. I like the cardswipe idea. It could be used merely as an authentication tool. If the person linking the terms chose to identify themselves, then they could, but if they wished to post anonymously that would be okay too.	Facilitator
As far as some people posting lewd comments, perhaps the librarians behind the scenes could be allowed to monitor who posted what,and then take necessary action. In regards to that, there should be an administrator who would monitor the content and delete anything that might be inappropriate.	facilitator
S16 1/27/08 10:54 AM	

Maybe if the library is not too large, and the folksonomy grows at an even pace, librarians could be responsible for "approving" tags, just as myspace users can approve comments. In a large library this might be impossible.	Facilitator
But librarians could probably approve one word or word phrase tags very quickly--there are not a whole heap of naughty words in our language. And maybe even searching for specific words in the tags would retrieve most offenders.	Contributor
S4 1/27/08 5:22 PM	
This is a great idea and I learned a new term. I had never head of folksonomy before. This would have great implications for online reference requests as librarians could these tags to locate information quicker. S4	V-A
S22 1/27/08 7:23 PM S12, Wow! I don't know where I've been but I had never heard of folksonomy let alone ever seen the word! Where in the world have I been? So - I was really pleased to read your posting and learn something new! Thanks for having such a great idea to post. It seems very useful and definitely helpful to have other users tag catalog materials. S22	V-A

8.11.2 Week 3-Question 2 Thread 8 (Anderson & Krathwohl)

Online Catalogue Folksonomy S12 1/24/08 2:12 PM   [1]
    RE: Online Catalogue Folksonomy S1 1/24/08 8:24 PM   [2]
    RE: Online Catalogue Folksonomy S7 1/26/08 4:12 PM   [3]
    RE: Online Catalogue Folksonomy S15 1/26/08 4:59 PM   [4]
    RE: Online Catalogue Folksonomy S19 1/26/08 11:00 PM   [5]
    RE: Online Catalogue Folksonomy S16 1/27/08 10:54 AM   [6]
    RE: Online Catalogue Folksonomy S4 1/27/08 5:22 PM   [7]
    RE: Online Catalogue Folksonomy S22 1/27/08 7:23 PM   [8]

Message	Content Analysis of message Anderson and Krathwohl
S12 1/24/08 2:12 PM Note: The project that I have outlined is not based on my own experience as librarian, as I have yet to work in a library. It is based on readings and discussions with librarians and information scientists. Therefore, there may be many issues that I have not considered, particularly when it comes to the technical aspects of information systems.	Null
Goals: The goal of the project is to include the patrons of the library in categorizing materials in the library's online catalogue through folksonomy, or user created tagging. The overriding goal is to get even more information to the library patrons.	Understand(Summarize)
Objectives: Users would be able to choose tags, or words describing the materials they have checked out. This would add a new dimension to the cross referencing already done by the library staff. This could make information more accessible to the public because they are able to describe the information themselves and create connections the staff may not have considered.	Understand(Summarize)
Scope: The systems analyst (which from what I am told is usually either a staff member such as the systems librarian or someone from an outside firm hired to do the job) would work with management, the staff, and a S24ple of the customer base to weigh the benefits and decide precisely what the system needs to do. Then the systems analyst works with the designers and builders to figure out how to create the system.	
The scope definition phase includes the following:	Understand(Summarize)

First they would "identify baseline problems and opportunities" (Whitten & Bentley, pg. 167). They would consider such problems as misspellings and inappropriate language. Second, they consider the limits of the project in terms of urgency, visibility, benefits, priority, and possible solutions to any problems or opportunities (Whitten & Bentley, pg. 171-2). They might consider problem solving components such as a built in spell check, forbidden words & phrases, and flagging for problems or mis-use. Third, is to negotiate baseline scope, or decide what ultimately will be included in the project and what will not. Fourth, they decide if the project is worthwhile. They may find that the project is extremely worthwhile in that it leads to the main objective of any library, which is getting more information to the patron. The schedule and budget are then established, and lastly the project plan is submitted for approval (Whitten & Bentley, pg. 172-4).	Understand(Summarize) Understand(Summarize) Understand(Summarize) Understand(Summarize)
S1 1/24/08 8:24 PM Hello S12: You have posted a really neat idea. I wonder whether the "folkonomy" from one area of the country will differ from that of other regions? Once all of these various folksonomies are created, some information scientist can do a study on information describing behavior of library patrons from various regions of the country. Maybe that information scientist will be you :) My expectation is that the project would be done electronically, i.e. that the online computer library catalog could have a specific folksonomy subject headings provided by the patrons. It would seem to me that the original subject headings would remain the same and that the folksonomy headings would only serve to improve access. I think you are right to prevent certain kinds of descriptions and I wonder if there is some kind of software akin to internet site blocking software, similiar to that used to prevent children's access to pornography, that could be altered to prevent the use of certain nomenclature. If lewd and lascivious nomenclature was allowed, pre teenage boys would implment the language in the taxonomy just to do it. Another possibility would be some kind of card swiping technology, where a person would have to swipe their library card in order to make an addition. Some people may be concerned with their privacy, however, so there might be some protect if the folksonomy subject headings could be traced to particular users. Good luck with your project. Have a terrific weekend. Best Regards, Very Respectfully, S1	Create(Generating) Create(planning) Evaluate(critique) Understand(compare) Understand(compare)
S7 1/26/08 4:12 PM Hello S12! This idea sounds really interesting, but I have never heard of it. Where did you find information on "folksonomy". Is there a link that you could provide on how to find the information? I just can't seem to wrap my head around **how this whole thing seems to work. For example, I don't know what you mean by "cross referencing already done by the library staff".** Thanks, S7	Null Evaluate(critique)
S15 1/26/08 4:59 PM What an interesting idea, **this would allow the users to come up with their own descriptors of a book or maybe even movies or music. It would also add an interesting spin for people who might like to browse the catalog using the folksonomy.**	Evaluate(critique)
S19 1/26/08 11:00 PM I too really like this idea. As we've seen in many of the postings, we all relate to things a different way. One person might categorize what they've read completely different than	Understand(compare)

waht someone else may.	
This idea reminds me of the concept of "Library Thing". It allows library users to network and create lists of books they read and descriptions (they call them user tags). http://www.librarything.com/	Understand(compare)
I was thinking about even going a step further and perhaps incorporating reviews about the books into the online catalog as well. People who have read the book could give a short synopsis of what they thought.	Create(generate)
My public library has a system like this, except the tape papers in the back of the book on which people write their comments. The electronic aspect would allow people to write and have it be preserved overtime where as these little papers would come out.	Understand(compare)
S1 also brought up some important ideas about privacy and confidentiality and just basic seriousness in posting. I like the cardswipe idea. It could be used merely as an authentication tool. If the person linking the terms chose to identify themselves, then they could, but if they wished to post anonymously that would be okay too.	Evaluate(critique)
As far as some people posting lewd comments, perhaps the librarians behind the scenes could be allowed to monitor who posted what,and then take necessary action. In regards to that, there should be an administrator who would monitor the content and delete anything that might be inappropriate.	Create(Plan)
S16 1/27/08 10:54 AM

Maybe if the library is not too large, and the folksonomy grows at an even pace, librarians could be responsible for "approving" tags, just as myspace users can approve comments. In a large library this might be impossible. | Create(plan) |
| But librarians could probably approve one word or word phrase tags very quickly--there are not a whole heap of naughty words in our language. And maybe even searching for specific words in the tags would retrieve most offenders. | Apply(implement) |
| S4 1/27/08 5:22 PM

This is a great idea and I learned a new term. I had never head of folksonomy before. This would have great implications for online reference requests as librarians could these tags to locate information quicker. S4 | Understand(explain) |
| S22 1/27/08 7:23 PM
S12,
Wow! I don't know where I've been but I had never heard of folksonomy let alone ever seen the word! Where in the world have I been? So - I was really pleased to read your posting and learn something new! Thanks for having such a great idea to post. It seems very useful and definitely helpful to have other users tag catalog materials. S22 | Understand(explain) |

8.11.3 Week 9-Question 1-Thread 2 (Waters and Gasson)

Political Feasibility in Libraries and an Election Year S10   3/5/08 10:56 AM   [1]
      RE: Political Feasibility in Libraries and an Election Year S6   3/5/08 5:33 PM   [2]
      RE: Political Feasibility in Libraries and an Election Year S20 3/6/08 5:28 PM   [3]
      RE: Political Feasibility in Libraries and an Election Year S3   3/7/08 10:54 PM   [4]
      RE: Political Feasibility in Libraries and an Election Year S19 3/8/08 3:42 PM   [5]
      RE: Political Feasibility in Libraries and an Election Year S8   3/9/08 6:46 PM   [6]
      RE: Political Feasibility in Libraries and an Election Year S13 3/9/08 9:10 PM   [7]
      RE: Political Feasibility in Libraries and an Election Year S12 3/9/08 9:51 PM   [8]

Message	Behavior Type
S10 3/5/08 10:56 AM Whitten and Bentley discuss Cultural (or Political) Feasibility as one of the Six Tests for Feasibility on page 417. While the other six tests of Operational, Technical, Schedule, Economic and Legal Feasibility deal more with the questions of physical possibility, **Cultural/Political Feasibility deals more with emotional investment. It may be necessary to garner a "buy-in" from employees or management. It's important to understand and address employees' resistance to change if it exists.** Whitten and Bentley raise the issue of multi-cultural appropriateness and international organizations addressing mutli-national concerns. (p.417)	Facilitator
     In addition to these issues, **I would consider Political Feasibility as it relates to public perception and acceptance**. Particularly in an election year, we hear candidates discuss a plethora or government systems. This year in particular we have heard democratic candidates try to create consumer (voter) buy-in to their individual Health Care Systems.	Complicator
Several years ago the nation was not ready to hear about universal health care systems, but now the public is demanding it's presidential candidates to have a plan. I would consider this part of Political Feasibility. Is the market/public supportive? This is similar to employee buy-in but different because it's not about buy-in to make the system operational, it's about Payback Analysis and Return on Investment.	Facilitator
     This is particularly an issue for public libraries, supported by tax dollars. It is vital that the Executive Director read the political atmosphere correctly. A system may be developed that meets the other 5 tests, but, if the political landscape is opposed, it makes implementing that system dangerous, if not impossible.	Contributor
For instance, creating a system that tracks what library patrons check-out and automatically sends alerts to the patrons about new books that they might like, might pass the other 5 feasibility tests, but politically fails because people don't want their reading habits tracked. Likewise, sometimes projects are not stopped or adjusted properly because of political pressure.	Facilitator
     For instance, a system may be developed to share resources between the county library and county museums. This involves a major investment of time and staff resources, but it is strongly encouraged by various political forces and representatives who are under pressure to show collaboration of community organizations.	Contributor
It is believed by the powers that be that the public would like to be able to view art-work from local museums remotely via the library catalog. The system designed is completely Legally Feasible, although some restrictions have to be put in place because of copyright that limit functionality, so some customers loose interest. The system is sort of Economically Feasible because a grant was written to support it, so the money is there; however, this only adds more political pressure to ensure success.	Complicator
There are some concerns about Schedule Feasibility because of the complicated nature of combining several different systems and staff, and the Political pressure to complete the project quickly, and this impacts Technical Feasibility, because, while it's possible to technically achieve what is desired, it may be impossible to achieve it quickly, within the budget, and create a system that is Operationally Feasible or usable by patrons.	Complicator
In the end, such a system may be simultaneously ruined by Political pressure and pressured to continue by Political demand.	Closer
S6 3/5/08 5:33 PM S10 I really like how you highlighted the way a library is affected by politics. I did not think the political feasibility was as important as the others until I read your response.	V-A
I like your real world example of a project where patrons reading habits are tracked, not a very library friendly tactic. It seems the political pressure is something to think about during all phases of developing a system. S6	V-A

S20 3/6/08 5:28 PM Hi S10-	
You make some great points concerning the political nature of libraries. You suggest a system that tracks patrons' borrowing habits to suggest new titles.	V-A
I wonder if the political atmosphere would ever be supportive of this or similar ideas in order to allow libraries to better "compete" with popular bookstores? I could see patron privacy being compromised for the sake of library competitiveness.	Facilitator
It's crazy what can be thought of as "good" when political confusion comes into play! Thanks for an interesting post, S20	
S3 3/7/08 10:54 PM S10...	
Excelln breakdown of the political and cultural feasibility issues a library would face while considering a new system.	V-A
Because there are many political considerations to take into account (privacy, tax payer money, finicky patrons), this feasibility test certainly outranks the others.	Contributor
From the outset, if a director can determine that a system will not be accepted or used by system or users, it does not matter if the technical or operational tests are determined to be feasible. Even economic feasibility can factor into political acceptance.	Contributor
Will the community feel it is necessary to spend money on a system that will not pay for itself or generate funds? The public library in my town is completely self-sufficient so it would undoubtedly be determined that the community would not support anything that is not completely necessary. S3	Facilitator
S19 3/8/08 3:42 PM S10,	
I too benefited from what you had to say about political feasibility. When you spoke about the recommendations of things we might also like, I thought of my experience with amazon.com.	V-A
Even though I've searched for things on amazon, strictly for information purposes (like ISBN #'s), the system still 'remembers' those things and sends what they think are reccommendations for things I might like**. I have never really considered the possibility that Amazon and the government might be linking arms to find out who might be ordering what, but I suppose that is a great possiblity** with all of fear of terrorism.	Facilitator
This brings a question in my mind about what would be appropriate research activities and what would cross the line? What is a librarian's role in reporting misuse of resources or possible security risks?	Facilitator
Thanks for this thought provoking post!	
S8 3/9/08 6:46 PM I like the way that you (S10) took a more "worldly" view of cultural and political feasibility.	V-A
Indeed if the librarian can't read the political climate, nothing else matters. **I'm not sure that ROI is really something that one would be concerned with in terms of a service oriented environment such as a public library, or a county hospital**, etc**. These types of organizations don't really seem to fit well within the type of structure which seeks to evaluate a specific economic benefit.**	Facilitator Complicator
S13 3/9/08 9:10 PM (S10) I also think the cultural/political feasibility is the most important aspect to consider in regards to public libraries.	V-A

After all, these institutions are built for the people - shouldn't any changes made reflect the needs of the people?	Facilitator
I love how you said cultural feasibility involves "emotional investment." This step is not always an obvious, concrete examination.	V-A
We must consider how the patron could possibly feel, how changes may affect their library lifestyle, and how a new system may be benefical or detrimental.	Contributor
Of course, we must also consider those who work within libraries. How will they maneuver a newly implemented system? Will it affect how they work and interact with others? Very interesting points! Thanks!	Complicator
S12 3/9/08 9:51 PM (S10)I thought your comparison of the presidential campaigns and cultural/political analysis to be an inspired analogy.	V-A
This concept is very often ignored by the technical part of the development team working on a system and it is crucial to the success of the project.	Contributor
Personally, **I was having a hard time understanding how Payback or ROI analysis works in an economic sense within a non-profit organization like a library** (esp. a public library).	Facilitator

8.11.4 Week 9 -Question 1-Thread 2 (Anderson & Krathwohl)

Message	Content Analysis of message Anderson and Krathwohl
S10 3/5/08 10:56 AM Whitten and Bentley discuss Cultural (or Political) Feasibility as one of the Six Tests for Feasibility on page 417. While the other six tests of Operational, Technical, Schedule, Economic and Legal Feasibility deal more with the questions of physical possibility, Cultural/Political Feasibility deals more with emotional investment. It may be necessary to garner a "buy-in" from employees or management. It's important to understand and address employees' resistance to change if it exists. Whitten and Bentley raise the issue of multi-cultural appropriateness and international organizations addressing mutli-national concerns. (p.417)	Understand(Summarize)
In addition to these issues, I would consider Political Feasibility as it relates to public perception and acceptance. Particularly in an election year, we hear candidates discuss a plethora or government systems. This year in particular we have heard democratic candidates try to create consumer (voter) buy-in to their individual Health Care Systems.	Create(Generating)
Several years ago the nation was not ready to hear about universal health care systems, but now the public is demanding it's presidential candidates to have a plan. I would consider this part of Political Feasibility. Is the market/public supportive? This is	Create(Generating)

similar to employee buy-in but different because it's not about buy-in to make the system operational, it's about Payback Analysis and Return on Investment.	
This is particularly an issue for public libraries, supported by tax dollars. It is vital that the Executive Director read the political atmosphere correctly. A system may be developed that meets the other 5 tests, but, if the political landscape is opposed, it makes implementing that system dangerous, if not impossible.	Create(Generating)
For instance, creating a system that tracks what library patrons check-out and automatically sends alerts to the patrons about new books that they might like, might pass the other 5 feasibility tests, but politically fails because people don't want their reading habits tracked. Likewise, sometimes projects are not stopped or adjusted properly because of political pressure.	Create(Generating)
For instance, a system may be developed to share resources between the county library and county museums. This involves a major investment of time and staff resources, but it is strongly encouraged by various political forces and representatives who are under pressure to show collaboration of community organizations.	
It is believed by the powers that be that the public would like to be able to view art-work from local museums remotely via the library catalog. The system designed is completely Legally Feasible, although some restrictions have to be put in place because of copyright that limit functionality, so some customers loose interest. The system is sort of Economically Feasible because a grant was written to support it, so the money is there; however, this only adds more political pressure to ensure success.	Create(Generating) / Evaluate(critique)
There are some concerns about Schedule Feasibility because of the complicated nature of combining several different systems and staff, and the Political pressure to complete the project quickly, and this impacts Technical Feasibility, because, while it's possible to technically achieve what is desired, it may be impossible to achieve it quickly, within the budget, and create a system that is Operationally Feasible or usable by patrons.	Evaluate(critique)
In the end, such a system may be simultaneously ruined by Political pressure and pressured to continue by Political demand.	Understand(Summarize)
S6 3/5/08 5:33 PM S10 I really like how you highlighted the way a library is affected by politics. I did not think the political feasibility was as important as the others until I read your response.	Understand(compare)
I like your real world example of a project where patrons reading habits are tracked, not a very library friendly tactic. It seems the political pressure is something to think about during all phases of developing a system. S6	Understand(summarize)
S20 3/6/08 5:28 PM Hi S10- You make some great points concerning the political nature of libraries. You suggest a system that tracks patrons' borrowing habits to suggest new titles.	Understand(summarize)
I wonder if the political atmosphere would ever be supportive of this or similar ideas in order to allow libraries to better "compete" with popular bookstores? I could see patron privacy being compromised for the sake of library competitiveness.	Create(generating)
It's crazy what can be thought of as "good" when political confusion comes into play! Thanks for an interesting post, S20	
S3 3/7/08 10:54 PM S10...	
Excelln breakdown of the political and cultural feasibility issues a library would face while considering a new system.	Null
Because there are many political considerations to take into account (privacy, tax payer money, finicky patrons), this feasibility test certainly outranks the others.	Analyze(Differentiate)

From the outset, if a director can determine that a system will not be accepted or used by system or users, it does not matter if the technical or operational tests are determined to be feasible. Even economic feasibility can factor into political acceptance.	Understand(explain)
Will the community feel it is necessary to spend money on a system that will not pay for itself or generate funds? The public library in my town is completely self-sufficient so it would undoubtedly be determined that the community would not support anything that is not completely necessary. S3	Understand(exemplify)
S19 3/8/08 3:42 PM S10, I too benefited from what you had to say about political feasibility. When you spoke about the recommendations of things we might also like, I thought of my experience with amazon.com.	Understand(compare)
Even though I've searched for things on amazon, strictly for information purposes (like ISBN #'s), the system still 'remembers' those things and sends what they think are reccommendations for things I might like. I have never really considered the possibility that Amazon and the government might be linking arms to find out who might be ordering what, but I suppose that is a great possiblity with all of fear of terrorism.	Understand(compare)
This brings a question in my mind about **what would be appropriate research activities and what would cross the line? What is a librarian's role in reporting misuse of resources or possible security risks?** Thanks for this thought provoking post!	Evaluate(critique)
S8 3/9/08 6:46 PM I like the way that you(S10) took a more "worldly" view of cultural and political feasibility.	Understand(compare)
Indeed if the librarian can't read the political climate, nothing else matters. I'm not sure that ROI is really something that one would be concerned with in terms of a service oriented environment such as a public library, or a county hospital, etc. These types of organizations don't really seem to fit well within the type of structure which seeks to evaluate a specific economic benefit.	Understand(summarize) Understand(compare)
S13 3/9/08 9:10 PM (S10) I also think the cultural/political feasibility is the most important aspect to consider in regards to public libraries.	Analyze(differentiate)
After all, these institutions are built for the people - shouldn't any changes made reflect the needs of the people?	Create(generating)
I love how you said cultural feasibility involves "emotional investment." This step is not always an obvious, concrete examination.	Analyze (differentiate)
We must consider how the patron could possibly feel, how changes may affect their library lifestyle, and how a new system may be benefical or detrimental.	Analyze(differentiate)
Of course, we must also consider those who work within libraries. How will they maneuver a newly implemented system? Will it affect how they work and interact with others? Very interesting points! Thanks!	Analyze(differentiate)
S12 3/9/08 9:51 PM (S10)I thought your comparison of the presidential campaigns and cultural/political analysis to be an inspired analogy.	Understand(explain)
This concept is very often ignored by the technical part of the development team working on a system and it is crucial to the success of the project.	Analyze(differentiate)

Personally, I was having a hard time understanding how Payback or ROI analysis works in an economic sense within a non-profit organization like a library (esp. a public library).	Understand(compare)

8.11.5 Week 1 -Question 2-Thread 4 (Waters and Gasson)

Process Design Specifications   S24 1/9/08 10:49 PM   [1]
        RE: Process Design Specifications S10 1/11/08 12:59 PM   [2]
                RE: Process Design Specifications S24 1/11/08 2:32 PM   [3]
                RE: Process Design Specifications S15 1/12/08 12:00 PM   [4]
                RE: Process Design Specifications S2 1/13/08 2:58 PM   [5]
                RE: Process Design Specifications S22 1/13/08 10:25 PM   [6]
        RE: Process Design Specifications S21 1/11/08 1:42 PM   [7]
        RE: Process Design Specifications S19 1/12/08 9:50 PM   [8]

Message	Behavior Type
S24 1/9/08 10:49 PM When licensing a system, you want to make sure that it will fullfill all of your process design specifications. Because the system will be coming from an outside source, the builder might not be familiar with the intricacies with your business. Having clearly defined process design specifications that you can check against the potential licensed system will help avoid any surprises after the purchase.	Contributor
Like the shopper picking up a copy of 'Quickbooks', one should be aware of what your current technology can handle versus what the new technology is out there (nothing like buying a program only to find how that your computer is too old to run it).	
They should take a look at what sort of support is offered by the creator of the program (is there a toll-free number or will every service call cost you as much as the program).	Facilitator
Will the new technology do everything your current technology can do as well as the improvements you are shopping for (and is it worth it)? How time consuming will it be to transfer your current data into this new system? How different will the new interface be from the current interface (and will the time it takes to train users be worth the hours of productivity lost)?	Contributor Facilitator
And while picking up a copy of Quickbooks can lead to a consumer losing a bit of cash from a paycheck, licensing a system could mean a contract that would be around for years. So it is very important that some sort of process design specifications have been outlined before anyone enters a "store".	Facilitator
S10 1/11/08 12:59 PM Hi S24, I think you make a good point about the ramifications of a business or library making a poor or uniformed decision.	V-A
Recently I was involved with a grant project that combined the resources of several local organizations such as libraries and museums. The was an interactive, online component that required the use of a community building" online program. The IT person in charge of selecting software chose the program because it had a lot of great features, and was on the cutting edge**; however, it ended up being the wrong choice because it was cumbersome for the end users who lacked the expertise to use the program effectively, and therefore those users gave up and did not participate in the community building.**	Contributor
Also, because of all the great features, the program used a lot of badwidth, and some of the organizations simply did not have enough bandwidth to support multiple stations running the program, causing it to freeze and quit unexpectedly, again causing users to get frustrated and give up.	Contributor

Even though the program was a great program in theory, and had a lot of the features that would have been helpful to us, it ended up being a big waste of time and money, and we ended up working around it.	Contributor
Ultimately, we ended up using Blackboard which, though not as fancy, was familiar to the end users and served the purposes of the grant without tying up a lot of bandwidth. **If we hadn't wasted the time and money on the first program we would have had more resources to use for the grant, and the online community would have come together sooner.**	Contributor
S24 1/11/08 2:32 PM Great real life example S10! Something tells me your experience is a shared one. I mean, even when I'm shopping for a more boring product, like a video game for my dad, suddenly I feel like a systems analyst! Will this game run on his current computer? Will this game run with his current video card? What kind of internet access will he need to go online? What kind of controls will this game use - keyboard or will he need to buy a controller?	V-A Contributor
I think as technology becomes a bigger part of our lives, more and more of us that don't think of ourselves as technical people find ourselves applying the same skills that a systems analyst used!	Facilitator
S15 1/12/08 12:00 PM S10, You have a good example of making sure a chosen program will run effectively with the available resources.	V-A
That must have been extremely frustrating for the users to have their stations freeze up or quit on them.	Contributor
Your example is proof that money and time can be saved in the long run with a little research and understanding of what an organization's resources can support.	Contributor
S2 1/13/08 2:58 PM S10, Great example of a project in which the Process Design Specifications were indadequate. In libraries (and museums?) in which funding is often particularly tight, effective planning is so critical. S2	Contributor
S22 1/13/08 10:25 PM S10, That was a wonderful example of what can happen when a program is great in theory but doesn't work in actuality because not everyone has the latest software or large bandwidths.	V-A
Sometimes a less visually appealing but much simpler program is what will suit the needs of a community or business. All those bells & whistles are great but will it actually do the job you need it to do, be fast and user friendly? Thanks for sharing! S22	Contributor
S21 1/11/08 1:42 PM (S24)I like how you specifically pointed out the different questions that one should ask when adding new software and making a process design specification. Thank you, it was very helpful. I think I understand the concept better now.	V-A
S19 1/12/08 9:50 PM Purchasing new technology that is not supported by our computers or current systems seems to happen a lot in our library.	Contributor
I can think of two instances off the top of my head. The first instance occurred a several years ago when our library was progressing toward the world of e-reserves. The systems librarian made a request for a scanner. The scanner was purchased only to find out that either our computers couldn't support it, or it couldn't handle the volume. This didn't just happen once, but twice. It's very frustrating for the person who is trying to implement an entirely new system to be roadblocked by the failure to plan. The second instance has been more recent. We have recently moved into a new building. The number of computers that we have onsite nearly tripled if not more. We also added	Contributor

additional service points at the circulation desk to help people. One of the things that the library wanted to invest in was ribbon printers to save on paper. The ribbon printers were purchased, but turned out to be incompatible with the other printers on the network. Everytime we would try and print to a normal printer, the ribbon printers interfered with the communication and no one was able to print. We still have to remind student workers not to print from the workstations with the ribbon printers, unless it's a document specifically for the ribbon printers.	Contributor
In both situations, if the library had communicated more effectively with IT and had a better process design specification, we would have saved a lot of time, energy, resources and frustration!	Contributor

8.11.6 Week 1 -Question 2-Thread 4 (Anderson & Krathwohl)

Process Design Specifications   S24 1/9/08 10:49 PM   [1]
    RE: Process Design Specifications S10 1/11/08 12:59 PM   [2]
       RE: Process Design Specifications S24 1/11/08 2:32 PM   [3]
       RE: Process Design Specifications S15 1/12/08 12:00 PM   [4]
       RE: Process Design Specifications S2 1/13/08 2:58 PM   [5]
       RE: Process Design Specifications S22 1/13/08 10:25 PM   [6]
   RE: Process Design Specifications S21 1/11/08 1:42 PM   [7]
   RE: Process Design Specifications S19 1/12/08 9:50 PM   [8]

Message	Content Analysis of message Anderson and Krathwohl
S24 1/9/08 10:49 PM When licensing a system, you want to make sure that it will fullfill all of your process design specifications. **Because the system will be coming from an outside source, the builder might not be familiar with the intricacies with your business. Having clearly defined process design specifications that you can check against the potential licensed system will help avoid any surprises after the purchase**.	Understand (explain)
Like the shopper picking up a copy of 'Quickbooks', one should be aware of what your current technology can handle versus what the new technology is out there (nothing like buying a program only to find how that your computer is too old to run it).	Understand(compare)
They should take a look at what sort of support is offered by the creator of the program (is there a toll-free number or will every service call cost you as much as the program).	
Will the new technology do everything your current technology can do as well as the improvements you are shopping for (and is it worth it)? How time consuming will it be to transfer your current data into this new system? How different will the new interface be from the current interface (and will the time it takes to train users be worth the hours of productivity lost)?	Create(planning)
And while picking up a copy of Quickbooks can lead to a consumer losing a bit of cash from a paycheck, licensing a system could mean a contract that would be around for years. So it is very important that some sort of process design specifications have been outlined before anyone enters a "store".	Create(planning) Understand(compare)
S10 1/11/08 12:59 PM Hi S24, I think you make a good point about the ramifications of a business or library making a poor or uniformed decision.	Understand(classify)
Recently I was involved with a grant project that combined the resources of several local organizations such as libraries and museums. The was an interactive, online component	

that required the use of a community building" online program. **The IT person in charge of selecting software chose the program because it had a lot of great features, and was on the cutting edge; however, it ended up being the wrong choice because it was cumbersome for the end users who lacked the expertise to use the program effectively, and therefore those users gave up and did not participate in the community building.**	Understand(explain)
Also, because of all the great features, the program used a lot of badwidth, and some of the organizations simply did not have enough bandwidth to support multiple stations running the program, causing it to freeze and quit unexpectedly, again causing users to get frustrated and give up.	Understand(explain)
Even though the program was a great program in theory, and had a lot of the features that would have been helpful to us, it ended up being a big waste of time and money, and we ended up working around it.	Evaluate(critique)
Ultimately, we ended up using Blackboard which, though not as fancy, was familiar to the end users and served the purposes of the grant without tying up a lot of bandwidth. If we hadn't wasted the time and money on the first program we would have had more resources to use for the grant, and the online community would have come together sooner.	Understand(compare)
S24 1/11/08 2:32 PM Great real life example S10! Something tells me your experience is a shared one. I mean, even when I'm shopping for a more boring product, like a video game for my dad, suddenly I feel like a systems analyst! Will this game run on his current computer? Will this game run with his current video card? What kind of internet access will he need to go online? What kind of controls will this game use - keyboard or will he need to buy a controller?	Understand(compare)
I think as technology becomes a bigger part of our lives, more and more of us that don't think of ourselves as technical people find ourselves applying the same skills that a systems analyst used!	Create(Generating)
S15 1/12/08 12:00 PM S10, You have a good example of making sure a chosen program will run effectively with the available resources. That must have been extremely frustrating for the users to have their stations freeze up or quit on them.	Understand(classify)
Your example is proof that money and time can be saved in the long run with a little research and understanding of what an organization's resources can support.	Understand(explain) Understand(classify)
S2 1/13/08 2:58 PM S10, Great example of a project in which the Process Design Specifications were indadequate. In libraries (and museums?) in which funding is often particularly tight, effective planning is so critical. S2	Understand(explain)
S22 1/13/08 10:25 PM S10, That was a wonderful example of what can happen when a program is great in theory but doesn't work in actuality because not everyone has the latest software or large bandwidths.	Understand(classify)
Sometimes a less visually appealing but much simpler program is what will suit the needs of a community or business. All those bells & whistles are great but will it actually do the job you need it to do, be fast and user friendly? Thanks for sharing! S22	Understand(compare)
S21 1/11/08 1:42 PM (S24)I like how you specifically pointed out the different questions that one should ask when adding new software and making a process design specification. Thank you, it was very helpful. I think I understand the concept better now.	Understand(classify)
S19 1/12/08 9:50 PM Purchasing new technology that is not supported by our computers or current systems seems to happen a lot in our library.	Understand(exemplify)

I can think of two instances off the top of my head. The first instance occurred a several years ago when our library was progressing toward the world of e-reserves. The systems librarian made a request for a scanner. The scanner was purchased only to find out that either our computers couldn't support it, or it couldn't handle the volume. This didn't just happen once, but twice. It's very frustrating for the person who is trying to implement an entirely new system to be roadblocked by the failure to plan.	Understand(exemplify)
The second instance has been more recent. We have recently moved into a new building. The number of computers that we have onsite nearly tripled if not more. We also added additional service points at the circulation desk to help people. One of the things that the library wanted to invest in was ribbon printers to save on paper. The ribbon printers were purchased, but turned out to be incompatible with the other printers on the network. Everytime we would try and print to a normal printer, the ribbon printers interfered with the communication and no one was able to print. We still have to remind student workers not to print from the workstations with the ribbon printers, unless it's a document specifically for the ribbon printers.	Understand(exemplify)
In both situations, if the library had communicated more effectively with IT and had a better process design specification, we would have saved a lot of time, energy, resources and frustration!	Understand(Summary)

8.11.7 Week 2-Question 2 Thread 15 (Waters and Gasson)

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FAST      S11   1/17/08 10:04 PM                    [1]
   RE: FAST  S16   1/17/08 10:20 PM                  [2]
         RE: FAST  S18   1/20/08 11:01 PM            [3]
   RE: FAST  S9    1/19/08 6:04 PM                   [4]
   RE: FAST  S19   1/19/08 11:58 PM                  [5]
   RE: FAST  S3    1/20/08 9:15 AM                   [6]
         RE: FAST  S11   1/20/08 2:14 PM             [7]
         RE: FAST  S15   1/20/08 3:09 PM             [8]
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Message	Behavior Type
S11 1/17/08 10:04 PM The fast approach as laid out by the authors **seems to be quite drawn out** for the sake of readers like myself who have no idea what systems analysis encompasses.	Facilitator
While FAST is an agile method that borrows it specific tools from other methods toolboxes it seems that if an organization were to utilize this method in the real world it would have to be one that is quite large, can take the time to implement a system over a period of months or years, and one that has a large budget to toy with. **It sounds like it could be quite risky for a smaller organization to take on such a task-at the same time**	Facilitator
I suppose there would be less work involved in gathering data in the requirements / problem analysis and devising scope.	Contributor
I suppose it looks as if the risks in such a task might outweigh the the solution. Of course this is my feeling until the authors get to the iterative and waterfall approaches. It's at this time when the FAST methodology seems to make a bit more sense. It seems that the eight steps of the FAST methodology are Finally, brought into focus in the iterative approach. It makes more sense for a smaller organization to to incorporate some analysis, design, and construction along the way (92).	Facilitator
I suppose that the authors main intent with extrapolating the FAST method is to show that the one size fits all methods are not as useful in contemporary analysis (92). The FAST method is flexible and interchangeable with other paths.	Contributor

As far as a smaller organization it seems more prudent to choose an alternate method such s commercial application packages. While this route does have its downfalls it seems to a way to go in smaller organizations with less processes. Bentley & Whitten (2007). Systems Analysis & Design Methods. New York: McGraw-Hill.	Facilitator
S16 1/17/08 10:20 PM Your point about the size of the business and the risks it takes is very good. I think it would make sense that some small businesses might not be able to take much risk by changing the system development process.	V-A
Maybe these businesses would depend more on a prescriptive model with known results, than a more creative model. I might not have much understanding of how systems development works in the real world, but this **seems like it coudld be a real concern**.	facilitator
S18 1/20/08 11:01 PM S16, I would think that a smaller organization would benefit from an agile method but more like extreme programming, than FAST, which is geared to a timebox and decreased budget.	Complicator
S9 1/19/08 6:04 PM (S16) I agree with your perspective about FAST when compared to other approaches, such as iterative. When I was reading, I was thinking that this process seems drawn out. Then I read about the iterative process and it made more sense. You get more feedback sooner and there seems to be less risk.	V-A
S19 1/19/08 11:58 PM (S11)I also identify very strongly with the iterative approach. I've had a great deal of experience with OCLC's WorldCat Resource Sharing sytems since its onset several years back.	V-A
They started out with a base program that did very basic functions of the interlibrary loan process, the nuts and bolts. Borrowing, lending, Renewing. Since the original program was released, in little steps, OCLC has added more in depth features, including a variety of printing functions, request searching functions, and different ways of choosing libraries to borrow from.	Contributor
For this process, I think the agile methodology they used worked very well. Thanks for sharing your views on the FAST system! Have a great weekend!	Contributor
S3 1/20/08 9:15 AM I was surprised to read that commercial application packages sometimes have an overall higher price tag than developing a system in-house. To an inexperienced person such as myself, I would think the opposite was true.	Facilitator
Additionally, Whitten and Bentley stated that these systems do not completely address the needs of an organization and some in-house systems development is needed. Considering these things, it is remarkable that commercial application packages are chosen over customized in-house production.	Contributor
S11 1/20/08 2:14 PM I agree (S3) that it is somewhat suprising to find out that commercial applications do cost more than building a system in-house.	V-A
I suppose the that in this case the financial risks might be closely involved with the scope of the project.	Contributor
Perhaps if an individual with a small business would benefit more in this case. Initially opting to buy commercial applications as opposed to hiring system analysts, designers, etc. are obviously a better choice in this case.	Facilitator
But then again as I am inexperienced in this area as well, I'm not exactly sure. As I read through post my decisions sway back and forth-but I suppose I am experiencing what most system owners experience when trying to make a decision.	Facilitator
S15 1/20/08 3:09 PM	

It surprises me too (S3) that commercial application packages can be more expensive than developing a system in-house.	V-A
I suppose that if you do not have someone on hand that can easily develop a system, than a quick and easy fix would be to buy it no matter how much it might end up costing.	Facilitator
But if it ends up not meeting the needs of your organization and in-house work is needed anyway than purchasing a commercial application package becomes not such a quick and easy solution.	Closer

8.11.8 Week 2-Question 2 Thread 15 (Anderson & Krathwohl)

FAST   S11   1/17/08 10:04 PM   [1]
    RE: FAST S16   1/17/08 10:20 PM   [2]
          RE: FAST S18   1/20/08 11:01 PM   [3]
    RE: FAST S9   1/19/08 6:04 PM   [4]
    RE: FAST S19   1/19/08 11:58 PM   [5]
    RE: FAST S3   1/20/08 9:15 AM   [6]
          RE: FAST S11   1/20/08 2:14 PM   [7]
          RE: FAST S15   1/20/08 3:09 PM   [8]

Message	Content Analysis of message Anderson and Krathwohl
S11 1/17/08 10:04 PM The fast approach as laid out by the authors seems to be quite drawn out for the sake of readers like myself who have no idea what systems analysis encompasses.	Evaluate(critique)
While FAST is an agile method that borrows it specific tools from other methods toolboxes it seems that if an organization were to utilize this method in the real world it would have to be one that is quite large, can take the time to implement a system over a period of months or years, and one that has a large budget to toy with. It sounds like it could be quite risky for a smaller organization to take on such a task-at the same time	Evaluate(critique)
I suppose there would be less work involved in gathering data in the requirements / problem analysis and devising scope.	
I suppose it looks as if the risks in such a task might outweigh the the solution. Of course this is my feeling until the authors get to the iterative and waterfall approaches. It's at this time when the FAST methodology seems to make a bit more sense. It seems that the eight steps of the FAST methodology are Finally, brought into focus in the iterative approach. It makes more sense for a smaller organization to to incorporate some analysis, design, and construction along the way (92).	Evaluate(critique)
I suppose that the authors main intent with extrapolating the FAST method is to show that the one size fits all methods are not as useful in contemporary analysis (92). The FAST method is flexible and interchangeable with other paths.	Evaluate(critique)
As far as a smaller organization it seems more prudent to choose an alternate method such s commercial application packages. While this route does have its downfalls it seems to a way to go in smaller organizations with less processes.	Understand(summarize)
Bentley & Whitten (2007). Systems Analysis & Design Methods. New York: McGraw-Hill.	Create(generating)
S16 1/17/08 10:20 PM Your point about the size of the business and the risks it takes is very good. I think it would make sense that some small businesses might not be able to take much risk by changing the system development process.	Understand(summarize)

Maybe these businesses would depend more on a prescriptive model with known results, than a more creative model. I might not have much understanding of how systems development works in the real world, but this seems like it coudld be a real concern.	Create(generating)
S18 1/20/08 11:01 PM S16, I would think that a smaller organization would benefit from an agile method but more like extreme programming, than FAST, which is geared to a timebox and decreased budget.	Create(generating)
S9 1/19/08 6:04 PM (S16) I agree with your perspective about FAST when compared to other approaches, such as iterative. When I was reading, I was thinking that this process seems drawn out. Then I read about the iterative process and it made more sense. You get more feedback sooner and there seems to be less risk.	Understand(summarize)
S19 1/19/08 11:58 PM (S11)I also identify very strongly with the iterative approach. I've had a great deal of experience with OCLC's WorldCat Resource Sharing sytems since its onset several years back.	Understand(exemplify)
They started out with a base program that did very basic functions of the interlibrary loan process, the nuts and bolts. Borrowing, lending, Renewing. Since the original program was released, in little steps, OCLC has added more in depth features, including a variety of printing functions, request searching functions, and different ways of choosing libraries to borrow from.	Understand(exemplify)
For this process, I think the agile methodology they used worked very well. Thanks for sharing your views on the FAST system! Have a great weekend!	Understand(summarize)
S3 1/20/08 9:15 AM I was surprised to read that commercial application packages sometimes have an overall higher price tag than developing a system in-house. To an inexperienced person such as myself, I would think the opposite was true.	Understand(summarize)
Additionally, Whitten and Bentley stated that **these systems do not completely address the needs of an organization and some in-house systems development is needed. Considering these things, it is remarkable that commercial application packages are chosen over customized in-house production.**	Evaluate(critique)
S11 1/20/08 2:14 PM I agree (S3) that it is somewhat suprising to find out that commercial applications do cost more than building a system in-house. I suppose the that in this case the financial risks might be closely involved with the scope of the project.	Understand(summarize) Create(generating)
Perhaps if an individual with a small business would benefit more in this case. Initially opting to buy commercial applications as opposed to hiring system analysts, designers, etc. are obviously a better choice in this case.	Create(generating)
But then again as I am inexperienced in this area as well, I'm not exactly sure. As I read through post my decisions sway back and forth-but I suppose I am experiencing what most system owners experience when trying to make a decision.	Null
S15 1/20/08 3:09 PM It surprises me too (S3) that commercial application packages can be more expensive than developing a system in-house.	Understand(summarize)
I suppose that if you do not have someone on hand that can easily develop a system, than a quick and easy fix would be to buy it no matter how much it might end up costing.	Create(generating)
But if it ends up not meeting the needs of your organization and in-house work is needed anyway than purchasing a commercial application package becomes not such a quick and easy solution.	Evaluate(critique)

8.11.9 Week 4 -Question 1-Thread 3 (Waters and Gasson)

Message	Behavior Type
S17 1/28/08 11:27 PM There are a couple of undesirable things that could happen if the Systems analyst takes the shortcut approach or rushes through the systems discovery process.	Facilitator
1. The project may get started but would have to be abandoned at a point because a potential problem that could have been detected during the requirements discovery process went undetected because the process was rushed. In this case all the initial costs could go waste including costs of equipment etc.	
2. The project could be finished as scheduled but it won't solve the problem for which it was started in the first place. At least not as well as they wanted it to be. In this case, the new system may create additional problems that may need additional funds greater than the initial costs, to solve.	Facilitator
3. The project could progress as scheduled but it will run out of funds sooner or later because of problems that went undetected when they rushed through the systems discovery stages. They will then have to go back for additional funds which could bring about suspicions and misunderstandings. The system analyst may even lose the contract if they deem his costs to be excessive.	Facilitator
4. As a result of problem three, there will be additional delays that could have been avoided. In fact, those funding the project may fire some of the stake holders, if they have the right to do so. That is, they may consider them as having misappropriated the funds.	Facilitator
5. The project could be finished "successfully" but it will not be beneficial in terms of cost-benefit analysis. The cost of finishing the project could be more than the potential or actual benefits that could be derived from it.	Facilitator
6. The project could continue as scheduled but the designers and programmers will have to be overworked in order to achieve success. **But that will hardly be true success because some critical staff may leave to other companies who are competitors.**	Complicator
7. Problem 6 could potentially mean loss of business to both the systems analyst and the owners of the system.	
8. The project could be started but will never get finished because of the problems that were not detected earlier when they rushed through the requirements discovery process. **The owners may be unwilling to stop the project because of the initial costs that have been invested in the project. Or the analyst may also be unwilling to stop the project because of the failure** that will be associated to his or her project.	Facilitator
9. In fact **some may argue that by taking this approach, they could succeed**. But at what price? Actually, it is unlikely to succeed because for projects that go through the full requirements discovery process, success is not 100% guaranteed.	Complicator

In all of the above scenarios the objectives for proposing the project would not be met. Even though they can take the shortcut approach and succeed eventually, it will be at a great cost in terms of additional funding and manpower problems for both the analyst and his team and for the owners as well.	Facilitator
If these potential problems are considered carefully, it will be better not to rush through the requirements discovery process. **This is because if the "fast food" approach is taken, eventually, both the analyst and the owners will have to pay for it one way or the other**. The analyst may need to engage more programmers or designers etc. to correct a lot of problems that were not detected because they rushed through the requirements discovery process. **Or the owners may have to come up with additional funds and spend more time to make up for it. Either way, it is a lose-lose situation.**	Complicator
Probably the most important consideration should be the "professional consideration". The systems analyst as a professional must resist any pressure to rush through a project. If the systems analyst bows to pressure, and takes the shortcut approach, he is compromising his position as a professional. – ["systems advisor"]. The systems analyst is the professional in this case. He needs to make a sound judgment at end of the day or he would have failed as a systems analyst. For him, it is a judgment call for which he must not fail to do the right thing. If the systems analyst is experienced, he would know that more and more projects never get finished because of such shortcuts. If the owners refuse to listen to the systems analyst at this point, he might be better off, if he asks to no longer be a part of the project. This is because; they will not listen to him when problems arise later in the project. Also, it should be a sign to the systems analyst that eventually, he will have to take the blame for a failed project. In fact the owners may come back to blame the systems analyst in the long run. This may hurt his reputation, big time. To me, the systems analyst must listen to that little voice of caution.	Complicator

Facilitator |
| S6 1/30/08 2:35 PM

S17,

I did not even think to mention the "professional consideration" aspect to this discussion. You are dead on in saying that the systems analyst much "resist any pressure to rush through a project," if not he or she is "compromising [his or her] position as a professional." Also, pointing out that much depends on the amount of experience the systems analyst has. | V-A |
| It is a balancing act between wanting to finish the project in a timely fashion and also listening to as you say "that little voice of caution." S6 | Facilitator |
| S10 1/30/08 4:53 PM
S17 and S6,
   I agree that the Systems Analyst really has that professional obligation. I think this type of scenerio, pressure from adminstrators to rush, actually happens quite often. | V-A |
| Often I think they don't really understand what they are asking or the consequences, they only understand the consequences from their side, in this instance, that funds will be diverted again and the project postponed. If the systems analyst gives in to this pressure they wont be doing anyone a favor, and it is their professional responsibility to explain this to the client. | Facilitator |
| If systems analysts are really problem solvers like we've discussed before, than perhaps the problem that they should solve here is not how to rush through the requirements discovery process, which they know can't or shouldn't be done, but how to solve the real problem of the funding issue. Perhaps they could suggest ways to make sure this doesn't happen, either by educating those diverting the funding on why the sytem is a priority, or by suggesting some sort of contract or allocated funds solution. S10 | Complicator |
| S20 2/2/08 8:58 AM
I agree that the system analyst should take into consideration his or her own professional reputation. It's a difficult choice - would it hurt one's reputation more to be the analyst of a failed project, or to leave a project due to disagreements with the owners? | V-A |
| Leaving a potentially unsuccessful project may make the analyst appear unreliable or | |

uncommitted to potential clients. The best bet would be to get to the root cause of the owners' desire to rush requirements.	Facilitator
If the project is so important that they want to rush this phase, then shouldn't the project be made top priority and not be put "on hold" when other projects come up? Continually diverting funds to other projects, plus wanting to rush the requirements phase, makes me think that this project may not be that big of a priority to the owners and may not be worth pursuing at all. S20	Complicator
S17 2/2/08 11:34 AM Hi S20, You make a good argument here. It is a tough choice, yes.	V-A
But then they also need to consider priorities as well or they need to redefine their priorities.	Facilitator
As you said it looks like the project may not be of a top priority as they claim it to be. Or may be they want to have it both ways - To have their cake and eat it. That is they want to consider it as a top priority project and yet NOT give it the attention and time it needs.	Facilitator
We would assume that if it is a top priority project, they will give it all the resources it needs including time and money **but it looks like this is not the case for them. Great contribution**, S20. S17	Facilitator
S14 2/3/08 12:21 AM This is the kind of situation where a lot of factors are in play: Your professional reputation is one consideration; other considerations are the mortgage, car payments, likeliness of landing a good job if you get axed for telling the upper managers that you won't take on the project unless it's on your terms, your marriage. It's all high-stakes poker now!!	Complicator
If the project is worth doing, you might want to strike a balance. How high up the ladder is the person/group that controls the allocation of money? If they're way up the ladder, or maybe in a different city, you have options. Conspire (well, not "conspire", but "consult") with some of the managers between yourself and the "upper level guys".	Facilitator
You might be able to show just enough work to get the project approved and funded, while stretching out some of the future timelines in the project so that you build in some more requirements analysis time. Sometimes life is about making tradeoffs. S14	Facilitator
S17 2/3/08 7:58 AM You' right S14. This goes to show that there is no straight answer to this kind of situations. A lot of skills, including ones you suggested, come into play. It is definately not a yes or no question. It really is not simple. Thanks for your contribution S17	Complicator
S17 1/31/08 2:13 PM Yeah. The systems analyst will definately find himself or herself in a situation where the owners will not burge. They want they system done quickly no matter what. If all other things fail, then he or she has to make some professional consideration and act accordingly. It is a situation where you cannot ignore the consequences. Thanks!	Facilitator

8.11.10 Week 4 -Question 1-Thread 3 (Anderson & Krathwohl)

Message	Content Analysis of message Anderson and Krathwohl
S17 1/28/08 11:27 PM There are a couple of undesirable things that could happen if the Systems analyst takes the shortcut approach or rushes through the systems discovery process.	Null
1. The project may get started but would have to be abandoned at a point because a potential problem that could have been detected during the requirements discovery process went undetected because the process was rushed. In this case all the initial costs could go waste including costs of equipment etc.	Create(generating)
2. The project could be finished as scheduled but it won't solve the problem for which it was started in the first place. At least not as well as they wanted it to be. In this case, the new system may create additional problems that may need additional funds greater than the initial costs, to solve.	Create(generating)
3. The project could progress as scheduled but it will run out of funds sooner or later because of problems that went undetected when they rushed through the systems discovery stages. They will then have to go back for additional funds which could bring about suspicions and misunderstandings. The system analyst may even lose the contract if they deem his costs to be excessive.	Create(generating)
4. As a result of problem three, there will be additional delays that could have been avoided. In fact, those funding the project may fire some of the stake holders, if they have the right to do so. That is, they may consider them as having misappropriated the funds.	Create(generating)
5. The project could be finished "successfully" but it will not be beneficial in terms of cost-benefit analysis. The cost of finishing the project could be more than the potential or actual benefits that could be derived from it.	
6. The project could continue as scheduled but the designers and programmers will have to be overworked in order to achieve success. **But that will hardly be true success because some critical staff may leave to other companies who are competitors.**	Create(generating)
7. Problem 6 could potentially mean loss of business to both the systems analyst and the owners of the system.	Create(generating)
8. The project could be started but will never get finished because of the problems that were not detected earlier when they rushed through the requirements discovery process. **The owners may be unwilling to stop the project because of the initial costs that have been invested in the project. Or the analyst may also be unwilling to stop the project because of the failure** that will be associated to his or her project.	Create(generating)
9. In fact **some may argue that by taking this approach, they could succeed**. But at what price? Actually, it is unlikely to succeed because for projects that go through the	Create(generating)

full requirements discovery process, success is not 100% guaranteed.	
In all of the above scenarios the objectives for proposing the project would not be met. Even though they can take the shortcut approach and succeed eventually, it will be at a great cost in terms of additional funding and manpower problems for both the analyst and his team and for the owners as well.	Create(generating)
If these potential problems are considered carefully, it will be better not to rush through the requirements discovery process. **This is because if the "fast food" approach is taken, eventually, both the analyst and the owners will have to pay for it one way or the other**. The analyst may need to engage more programmers or designers etc. to correct a lot of problems that were not detected because they rushed through the requirements discovery process. **Or the owners may have to come up with additional funds and spend more time to make up for it. Either way, it is a lose-lose situation.**	Create(generating)
Probably **the most important consideration should be the "professional consideration". The systems analyst as a professional must resist any pressure to rush through a project**. If the systems analyst bows to pressure, and takes the shortcut approach, he is compromising his position as a professional. – ["systems advisor"]. The systems analyst is the professional in this case. He needs to make a sound judgment at end of the day or he would have failed as a systems analyst. For him, it is a judgment call for which he must not fail to do the right thing. If the systems analyst is experienced, he would know that more and more projects never get finished because of such shortcuts. If the owners refuse to listen to the systems analyst at this point, he might be better off, if he asks to no longer be a part of the project. This is because; they will not listen to him when problems arise later in the project. Also, it should be a sign to the systems analyst that eventually, he will have to take the blame for a failed project. In fact the owners may come back to blame the systems analyst in the long run. This may hurt his reputation, big time. To me, the systems analyst must listen to that little voice of caution.	Create(generating) Analyze(differentiate)
S6 1/30/08 2:35 PM S17, I did not even think to mention the "professional consideration" aspect to this discussion. You are dead on in saying that the systems analyst much "resist any pressure to rush through a project," if not he or she is "compromising [his or her] position as a professional." Also, pointing out that much depends on the amount of experience the systems analyst has. It is a balancing act between wanting to finish the project in a timely fashion and also listening to as you say "that little voice of caution." S6	Understand(Summarize) Evaluate(critique)
S10 1/30/08 4:53 PM S17 and S6, I agree that the Systems Analyst really has that professional obligation. I think this type of scenerio, pressure from adminstrators to rush, actually happens quite often. Often I think they don't really understand what they are asking or the consequences, they only understand the consequences from their side, in this instance, that funds will be diverted again and the project postponed. If the systems analyst gives in to this pressure they wont be doing anyone a favor, and it is their professional responsibility to explain this to the client. If systems analysts are really problem solvers like we've discussed before, than perhaps the problem that they should solve here is not how to rush through the requirements discovery process, which they know can't or shouldn't be done, but how to solve the real problem of the funding issue. Perhaps they could suggest ways to make sure this doesn't happen, either by educating those diverting the funding on why the sytem is a priority, or by suggesting some sort of contract or allocated funds solution. S10	Understand(classify) Create(generating) Create(generate)
S20 2/2/08 8:58 AM I agree that the system analyst should take into consideration his or her own professional reputation. It's a difficult choice - would it hurt one's reputation more to be the analyst of a failed project, or to leave a project due to disagreements with the owners?	Analyze(differentiate)

Leaving a potentially unsuccessful project may make the analyst appear unreliable or uncommitted to potential clients. **The best bet would be to get to the root cause of the owners' desire to rush requirements.**	Create(planning)
If the project is so important that they want to rush this phase, then shouldn't the project be made top priority and not be put "on hold" when other projects come up? Continually diverting funds to other projects, plus wanting to rush the requirements phase, makes me think that this project may not be that big of a priority to the owners and may not be worth pursuing at all. S20	Create(generating)
S17 2/2/08 11:34 AM Hi S20, You make a good argument here. It is a tough choice, yes. But then they also need to consider priorities as well or they need to redefine their priorities. As you said it looks like the project may not be of a top priority as they claim it to be. Or may be they want to have it both ways - To have their cake and eat it. That is they want to consider it as a top priority project and yet NOT give it the attention and time it needs. We would assume that if it is a top priority project, they will give it all the resources it needs including time and money **but it looks like this is not the case for them. Great contribution**, S20. S17	Create(generating) Analyze(differentiate) Understand(summarize)
S14 2/3/08 12:21 AM This is the kind of situation where a lot of factors are in play: Your professional reputation is one consideration; other considerations are the mortgage, car payments, likeliness of landing a good job if you get axed for telling the upper managers that you won't take on the project unless it's on your terms, your marriage. It's all high-stakes poker now!! If the project is worth doing, you might want to strike a balance. How high up the ladder is the person/group that controls the allocation of money? If they're way up the ladder, or maybe in a different city, you have options. Conspire (well, not "conspire", but "consult") with some of the managers between yourself and the "upper level guys". You might be able to show just enough work to get the project approved and funded, while stretching out some of the future timelines in the project so that you build in some more requirements analysis time. Sometimes life is about making tradeoffs. S14	Analyzing(Differentiate) Create(generating) Create(Plan)
S17 2/3/08 7:58 AM You' right S14. This goes to show that there is no straight answer to this kind of situations. A lot of skills, including ones you suggested, come into play. It is definately not a yes or no question. It really is not simple. Thanks for your contribution S17	Understand(Summarize)
S17 1/31/08 2:13 PM Yeah. The systems analyst will definately find himself or herself in a situation where the owners will not burge. They want they system done quickly no matter what. If all other things fail, then he or she has to make some professional consideration and act accordingly. It is a situation where you cannot ignore the consequences. Thanks!	Create(Plan)

8.11.11 Week 10 -Question 1-Thread 6 (Waters and Gasson)

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Testing          S9    3/12/08 7:36 PM              [1]
     RE: Testing    S3    3/12/08 9:07 PM             [2]
          RE: Testing    S6    3/13/08 5:25 PM         [3]
          RE: Testing    S11   3/16/08 6:22 PM         [4]
     RE: Testing    S16   3/13/08 5:15 PM             [5]
     RE: Testing    S23   3/13/08 3:57 PM             [6]
     RE: Testing    S19   3/16/08 7:59 PM             [7]
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Message	Behavior Type
S9 3/12/08 7:36 PM	
As the textbook states, "testing should not be deferred until after the entire program has been written!" (Whitten & Bentley, p688). While this is true, you also do not want to overtest software, it could drive up the time spent on a project and cost.	Contributor
As for which type of test a business should do, I like validation testing because it is done in a live environment and uses real data. **It also seems to test more parts of the system(performance, peak workload processing performance, human engineering test, methods and procedures test, and backup and recovery test).**	Facilitator
Another test that is probably used often is audit testing because it is one final test to do before implementing the system. Audit testing "certifies that the system is free of errors and is ready to be placed into operation."	Contributor
I am sure that other tests, such as verification testing and systems acceptance testing are highly used also. Verification testing posed a slight problem for me because it used simulated data in a simulated environment. I can see the point because it saves time and money, but it is not the same thing as going into the real environment using real data. Wouldn't some errors be missed in this manner? I suppose no systems test filters out all of the problems.	Facilitator
S3 3/12/08 9:07 PM	
I think addressing the costs of over-testing the components of a system is very important. That was a thought that I had during reading the last chapter (!). Testing is obviously important, otherwise there could be problems that go unnoticed.	Contributor
However, does too much testing set a new system back both in time and budget? Without really solid and well planned systems construction and implementation plans, too much unfocused testing could lead to set backs.	Facilitator
S6 3/13/08 5:25 PM	
I can see how organizations may feel testing it too time consuming and expensive. However, as a systems analyst it is our responsibility to explain to them that in the end the testing, when done properly, will save the company money.	Facilitator
S11 3/16/08 6:22 PM	
S3,	
I think you make a good point here. While I understand the importance of every process in analysis, there comes a time when it's easy to see how some of the steps are missed, overlooked, or just plain skipped.	V-A
I'm not saying that I'm in support of that, but I think it becomes easier to see why systems fail in the long run. It seems that in the real world companies might push for implementation of a system quickly. As an analyst, it would be difficult to do everything correctly while under that pressure. I suppose that one thing that might help a project is the documentation from the past.	Facilitator
This is just me rambling on, but I think your comment offers something to think about.	
When does a process just carry on too long. It seems almost impossible to find every bug before a system is Finally, implemented and there has to be a time in which to do it.	V-A Facilitator
S16 3/13/08 5:15 PM	
I can see how one might want to test a system using "real world data." But an analyst might also want to see what else the system can do. For instance, some systems might receive simple inputs most of the time. But ever so rarely, they receive something unusual--say, unusual address information or complicated shipping instructions.	Complicator
Systems developers might need to create some difficult inputs for the system to make sure that it can handle them. Waiting for these types of inputs could be expensive and unnecessary if you could just make them up. This would be an instance for which "real world data" might not test the limits of the system.	Complicator
S23 3/13/08 3:57 PM	

Greetings, You made a good point about over testing. I did not think of that in my response because money is most likely a major issue when developing these programs.	V-A
I guess that you have to find a balance for the system owners between over testing the system and testing the system enough to find various problems in the system. Good point! Thank You S23	Contributor
S19 3/16/08 7:59 PM S9, I think your point is valid. When reading some of the responses, the thought that kept popping into my head was that we don't want to test forever, because even if one did, all the problems wouldn't be found/discovered--unfortunately, we cannot create a 'perfect' program.	V-A
In S17's post, he said something like: Microsoft willingly delays the outset of a product when they know there are major risks or defects in the software. Otherwise, they send it to production and do updates later on.	facilitator
IF all the tests are coming back with minor nuances instead of big fixes, it might be worthwhile to send the system out to implementation and then update it later. Thanks for your insight! S19	facilitator

8.11.12 Week 10 -Question 1-Thread 6 (Anderson & Krathwohl)

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Testing          S9    3/12/08 7:36 PM              [1]
     RE: Testing      S3    3/12/08 9:07 PM          [2]
          RE: Testing      S6    3/13/08 5:25 PM     [3]
          RE: Testing      S11   3/16/08 6:22 PM     [4]
     RE: Testing      S16   3/13/08 5:15 PM          [5]
     RE: Testing      S23   3/13/08 3:57 PM          [6]
     RE: Testing      S19   3/16/08 7:59 PM          [7]
```

Message	Content Analysis of message Anderson and Krathwohl
S9 3/12/08 7:36 PM As the textbook states, "testing should not be deferred until after the entire program has been written!" (Whitten & Bentley, p688). While this is true, **you also do not want to overtest software, it could drive up the time spent on a project and cost.**	Understand(explain)
As for which type of test a business should do, I like validation testing because it is done in a live environment and uses real data. **It also seems to test more parts of the system(performance, peak workload processing performance, human engineering test, methods and procedures test, and backup and recovery test).**	Evaluate(critique)
Another test that is probably used often is audit testing because it is one final test to do before implementing the system. Audit testing "certifies that the system is free of errors and is ready to be placed into operation."	Understand(Summarize)
I am sure that other tests, such as verification testing and systems acceptance testing are highly used also. Verification testing posed a slight problem for me because it used simulated data in a simulated environment. I can see the point because it saves time and money, but it is not the same thing as going into the real environment using real data. **Wouldn't some errors be missed in this manner? I suppose no systems test filters out all of the problems.**	Create(generating)

S3 3/12/08 9:07 PM I think addressing the costs of over-testing the components of a system is very important. That was a thought that I had during reading the last chapter (!). **Testing is obviously important, otherwise there could be problems that go unnoticed.**	Understand(explain)
However, does too much testing set a new system back both in time and budget? Without really solid and well planned systems construction and implementation plans, too much unfocused testing could lead to set backs.	Create(generating)
S6 3/13/08 5:25 PM I can see how organizations may feel testing it too time consuming and expensive. **However, as a systems analyst it is our responsibility to explain to them that in the end the testing, when done properly, will save the company money.**	Evaluate(critique)
S11 3/16/08 6:22 PM S3, I think you make a good point here. While I understand the importance of every process in analysis, there comes a time when it's easy to see how some of the steps are missed, overlooked, or just plain skipped.	Understand(summarize)
I'm not saying that I'm in support of that, but I think it becomes easier to see why systems fail in the long run. **It seems that in the real world companies might push for implementation of a system quickly. As an analyst, it would be difficult to do everything correctly while under that pressure.** I suppose that one thing that might help a project is the documentation from the past. This is just me rambling on, but I think your comment offers something to think about.	Evaluate(critique)
When does a process just carry on too long. It seems almost impossible to find every bug before a system is Finally, implemented and there has to be a time in which to do it.	Evaluate(critique)
S16 3/13/08 5:15 PM I can see how one might want to test a system using "real world data." **But an analyst might also want to see what else the system can do. For instance, some systems might receive simple inputs most of the time. But ever so rarely, they receive something unusual--**say, unusual address information or complicated shipping instructions.	Create(Generating)
Systems developers **might need to create some difficult inputs for the system to make sure that it can handle them**. Waiting for these types of inputs could be expensive and unnecessary if you could just make them up. This would be an instance for which "real world data" might not test the limits of the system.	Create(Generating)
S23 3/13/08 3:57 PM Greetings, You made a good point about over testing. I did not think of that in my response because money is most likely a major issue when developing these programs.	Understand(explain)
I guess that you have to find a balance for the system owners between over testing the system and testing the system enough to find various problems in the system. Good point! Thank You S23	Understand(Summarize)
S19 3/16/08 7:59 PM S9, I think your point is valid. When reading some of the responses, the thought that kept popping into my head was that **we don't want to test forever, because even if one did, all the problems wouldn't be found/discovered**--unfortunately, we cannot create a 'perfect' program.	Evaluate(critique)
In S17's post, he said something like: Microsoft willingly delays the outset of a product when they know there are major risks or defects in the software. Otherwise, they send it to production and do updates later on.	Understand(exemplify)
IF all the tests are coming back with minor nuances instead of big fixes, it might be	

worthwhile to send the system out to implementation and then update it later.	
Thanks for your insight! S19	Create(Generating)

8.11.13 Week 7 -Question 1-Thread 9 (Waters and Gasson)

Message	Behavior Type
S9 2/21/08 8:08 PM Here are my documents for week 7. I continue using my subject as the County Library.	Null
For the context DFD, I found five external agents(besides time): Patron, Potential Patron(?), Collections, Billing, and Patron Services. The Main system is the circulation system.	Contributor
An example of a couple of data flows that I found were the bills sent and paid. Paid goes toward the billing subsystem and sent goes toward the circulation system. Data flow to me means the different avenues of information being driven upon.	Contributor
On my decomposition diagram, the top of the chart is the circulation system because that is the largest box that the others fit into.	
The four subsystems are: Billing, Collection, Checkout, and Patron Services. Under each subsystem are more specific tasks that each subsystem is responsible for.	Contributor
My event response list is fairly self-explanatory, I hope! The actor/external agent performs the task, the event is what is happening, the trigger starts the action, and the response is what happens after the action has begun.	Contributor
For example, one of my actor is the patron, whose event is material requests, which is triggered by the library not having the book currently checked in, and the response is being put on a waiting list.	Contributor
Hope that all is easy to comprehend.	Contributor
I appreciate any and all feedback!	P-K-E
S20 2/23/08 12:48 PM You did a great job with your list. I didn't even think of adding a billing component to mine.	V-A
In [Non USA Country], they do a LOT more billing in general - anything but books you have to pay to borrow because of how library services are defined. It'd be an especially important componenet here. Thanks, S20	Complicator
S9 2/24/08 12:13 PM Thanks for the input, S20. That's interesting about the billing system in [Non USA Country]. I guess the patrons must really want to be a part of the library to join, which is a good thing!	Contributor
S6 2/24/08 4:06 PM That is a very interesting concept. I never thought there would be such a big difference in [Non USA Country] libraries to over here in the US. Learn something new every day! S6	Contributor

S20 2/29/08 11:40 AM The basic reason is that when the library system as we know it today was first established in [Non USA Country] - about 1960-ish, I think **- they only defined it as providing free access to books. So as technology has developed and more options are provided through the libraries, whether** it be interlibrary loan services or borrowing CDs or DVDs, these items/services are not defined as "free."	Complicator
So, borrowing them means a small charge. When I joined the library here, I was given a whole sheet of borrowing charges. I was kind of shocked. :-) - S20	Contributor
S13 3/2/08 8:14 PM I like your inclusion of a Billing Department. I don't see that side of the library where I work so I didn't even think to include it. It is a unique entity that interacts with outside entities so its inclusion is important. Nice work.	V-A

8.11.14 Week 7 -Question 1-Thread 9 (Anderson & Krathwohl)

Cnt Lib Cntxt DFD, Deco Diag & Evnt Resp List   S9   2/21/08 8:08 PM   [1]
   RE: Cnt Lib Cntxt DFD, Deco Diag & Evnt Resp List   S20   2/23/08 12:48 PM   [2]
     RE: Cnt Lib Cntxt DFD, Deco Diag & Evnt Resp List   S9   2/24/08 12:13 PM   [3]
       RE: Cnt Lib Cntxt DFD, Deco Diag & Evnt Resp List   S6   2/24/08 4:06 PM   [4]
         RE: Cnt Lib Cntxt DFD, Deco Diag & Evnt Resp List   S20 2/29/08 11:40 AM   [5]
   RE: Cnt Lib Cntxt DFD, Deco Diag & Evnt Resp List   S13   3/2/08 8:14 PM   [6]

Message	Content Analysis of message Anderson and Krathwohl
S9 2/21/08 8:08 PM Here are my documents for week 7. I continue using my subject as the County Library.	Null
For the context DFD, I found five external agents(besides time): Patron, Potential Patron(?), Collections, Billing, and Patron Services. The Main system is the circulation system.	Analyze(differentiate)
An example of a couple of data flows that I found were the bills sent and paid. Paid goes toward the billing subsystem and sent goes toward the circulation system. Data flow to me means the different avenues of information being driven upon.	Analyze(differentiate)
On my decomposition diagram, the top of the chart is the circulation system because that is the largest box that the others fit into.	
The four subsystems are: Billing, Collection, Checkout, and Patron Services. Under each subsystem are more specific tasks that each subsystem is responsible for.	Analyze(differentiate)
My event response list is fairly self-explanatory, I hope! The actor/external agent performs the task, the event is what is happening, the trigger starts the action, and the response is what happens after the action has begun.	Analyze(organize)
For example, one of my actor is the patron, whose event is material requests, which is triggered by the library not having the book currently checked in, and the response is being put on a waiting list.	Understand(explain)
Hope that all is easy to comprehend.	Understand(exemplify)
I appreciate any and all feedback!	
S20 2/23/08 12:48 PM You did a great job with your list. I didn't even think of adding a billing component to mine.	Evaluate(critique)

In [Non USA Country], they do a LOT more billing in general - anything but books you have to pay to borrow because of how library services are defined. It'd be an especially important componenet here. Thanks, S20	Understand(compare)
S9 2/24/08 12:13 PM Thanks for the input, S20. That's interesting about the billing system in [Non USA Country]. I guess the patrons must really want to be a part of the library to join, which is a good thing!	Analyze(attribute)
S6 2/24/08 4:06 PM That is a very interesting concept. I never thought there would be such a big difference in [Non USA Country] libraries to over here in the US. Learn something new every day! S6	Understand(compare)
S20 2/29/08 11:40 AM The basic reason is that when the library system as we know it today was first established in [Non USA Country] - about 1960-ish, I think **- they only defined it as providing free access to books. So as technology has developed and more options are provided through the libraries, whether** it be interlibrary loan services or borrowing CDs or DVDs, these items/services are not defined as "free." So, borrowing them means a small charge. When I joined the library here, I was given a whole sheet of borrowing charges. I was kind of shocked. :-) - S20	Understand(explain) Understand(compare)
S13 3/2/08 8:14 PM I like your inclusion of a Billing Department. I don't see that side of the library where I work so I didn't even think to include it. It is a unique entity that interacts with outside entities so its inclusion is important. Nice work.	Evaluate(critique)

8.11.15 Week 7 -Question 1-Thread 14 (Waters and Gasson)

Process Modelling - County Library System   S12   2/22/08 4:24 PM   [1]
    RE: Process Modelling - County Library System   S9   2/24/08 12:17 PM   [2]
      RE: Process Modelling - County Library System   S12   2/24/08 3:42 PM   [3]
      RE: Process Modelling - County Library System   S12   2/24/08 4:13 PM   [4]
        RE: Process Modelling - County Library System   S19   2/24/08 4:19 PM   [5]
          RE: Process Modelling - County Library System   S12   2/24/08 4:24 PM   [6]

Message	Content Analysis of message Waters and Gasson
S12 2/22/08 4:24 PM Decompostion Diagram - McCue Here is my first diagram. I had to add some things that were not on the ERD. I think I understood okay, but please tell me if I have something wrong. Thanks, S12	P-K-E
S9 2/24/08 12:17 PM First of all, I love how you organized and numbered your chart. It was very easy to understand! The only change I would make would be the deletion of "Staff Hands Items & Slip to Patron." This is not necessary because it is really just delivery. It is not an essential process, in my opinion! S9	V-A Facilitator
S12 2/24/08 3:42 PM Decomposition DRD - McCue Context DRD - McCue Thank S9, I decided to take your advice. Here also is my context drd, which I did not understand at all.	V-A

The page in the book might as well have been in Ancient Greek and the examples I looked at from other people dealt with different actions and processes than I did in mine.	Contributor
Please help me!	P-K-E
I will post my event response list here later today with some narrative of what I was trying to accomplish. Thanks, S12	
S12 2/24/08 4:13 PM Events Response List - McCue Here is the final diagram. My diagrams, beginning with the normalized ERD, dealt with the processes and entities involved in the simple acts of a library patron looking for materials and then checking them out from one branch in a county library system.	Contributor
My ERD outlined the entities involved, my Decomposition DRD broke down the two primary actions/processes, and the Events Response List recorded the responses to these two actions/processes by the three primary actors.	Contributor
The context DRD needs obvious work, because it is not clear to me what it is supposed to accomplish from reading the text.	
I would appreciate any more feedback. Thank you, S12	P-K-E
S19 2/24/08 4:19 PM S12: I think your context DFD is straightforward and to the point. It shows the inputs and outputs of the system very well.	V-A
The only one that was missing was the Library Systems output to the patron....Perhaps you could put "library services" or something like that there. Thanks! S19	Facilitator
S12 2/24/08 4:24 PM Context DRD – McCue Thanks S19!	

8.11.16 Week 7 -Question 1-Thread 14 (Anderson & Krathwohl)

Process Modelling - County Library System   S12   2/22/08 4:24 PM   [1]
     RE: Process Modelling - County Library System   S9   2/24/08 12:17 PM   [2]
        RE: Process Modelling - County Library System   S12   2/24/08 3:42 PM   [3]
        RE: Process Modelling - County Library System   S12   2/24/08 4:13 PM   [4]
          RE: Process Modelling - County Library System   S19   2/24/08 4:19 PM   [5]
            RE: Process Modelling - County Library System   S12   2/24/08 4:24 PM   [6]

Message	Content Analysis of message Anderson and Krathwohl
S12 2/22/08 4:24 PM Decompostion Diagram - McCue Here is my first diagram. I had to add some things that were not on the ERD. I think I understood okay, but please tell me if I have something wrong. Thanks, S12	Understand(explain)
S9 2/24/08 12:17 PM First of all, I love how you organized and numbered your chart. It was very easy to understand!	Evaluate(critique)
The only change I would make would be the deletion of "Staff Hands Items & Slip to Patron." **This is not necessary because it is really just delivery. It is not an essential process**, in my opinion! S9	Analyze(differentiate)
S12 2/24/08 3:42 PM Decomposition DRD - McCue	

Context DRD - McCue Thank S9, I decided to take your advice. Here also is my context drd, which I did not understand at all.	Null
The page in the book might as well have been in Ancient Greek and the examples I looked at from other people dealt with different actions and processes than I did in mine.	Evaluate(critique)
Please help me!	
I will post my event response list here later today with some narrative of what I was trying to accomplish. Thanks, S12	Null
S12 2/24/08 4:13 PM Events Response List - McCue Here is the final diagram. My diagrams, beginning with the normalized ERD, dealt with the processes and entities involved in the simple acts of a library patron looking for materials and then checking them out from one branch in a county library system.	Analyze(differentiate)
My ERD outlined the entities involved, my Decomposition DRD broke down the two primary actions/processes, and the Events Response List recorded the responses to these two actions/processes by the three primary actors.	
The context DRD needs obvious work, because it is not clear to me what it is supposed to accomplish from reading the text.	Understand(explain)
I would appreciate any more feedback. Thank you, S12	Evaluate(critique)
S19 2/24/08 4:19 PM S12: I think your context DFD is straightforward and to the point. It shows the inputs and outputs of the system very well.	Evaluate(critique)
The only one that was missing was the Library Systems output to the patron....Perhaps you could put "library services" or something like that there. Thanks! S19	Evaluate(critique)
S12 2/24/08 4:24 PM Context DRD – McCue Thanks S19!	

8.12 Average threads

	Week	Question	Thread	MESSAGES	depth		participants
				Average Threads			
23	6	1	1	5	5	4	
24	7	1	17	5	2	2	
25	1	2	12	4	2	4	
26	1	1	10	3	3	3	
27	1	2	19	3	2	2	

8.12.1 Week 6 -Question 1-Thread 1 (Waters and Gasson)

Tuples? S7 2/15/08 12:07 PM   [1]
    RE: Tuples? S20 2/16/08 5:09 AM   [2]
        RE: Tuples? S17 2/16/08 7:56 AM   [3]
            RE: Tuples? S7 2/17/08 11:16 PM   [4]
                RE: Tuples? S23 2/17/08 11:25 PM   [5]

Message	Behavior Type
S7 2/15/08 12:07 PM What are tuples? S7	P-K-E
S20 2/16/08 5:09 AM I have no idea. I was lost on this term, too. - S20	Null
S17 2/16/08 7:56 AM I cannot give the official definition of it. It is a mathematical term, I guess. **In databases, I have heard it being used nterchangeably with a record or a series of records or in a table, a row of data.**	Closer
S7 2/17/08 11:16 PM Thanks S17!	V-A
S23 2/17/08 11:25 PM Thank you! I needed some help on that one too! S23	V-A

8.12.2 Week 6 -Question 1-Thread 1 (Anderson & Krathwohl)

```
Tuples? S7 2/15/08 12:07 PM                          [1]
     RE: Tuples? S20 2/16/08 5:09 AM                 [2]
         RE: Tuples? S17 2/16/08 7:56 AM             [3]
             RE: Tuples? S7 2/17/08 11:16 PM         [4]
                 RE: Tuples? S23 2/17/08 11:25 PM    [5]
```

Message	Content Analysis of message Anderson and Krathwohl
S7 2/15/08 12:07 PM What are tuples? S7	Null
S20 2/16/08 5:09 AM I have no idea. I was lost on this term, too.- S20	Null
S17 2/16/08 7:56 AM I cannot give the official definition of it. It is a mathematical term, I guess. In databases, I have heard it being used interchangeably with a record or a series of records or in a table, a row of data.	Understand(summarize)
S7 2/17/08 11:16 PM Thanks S17!	Null
S23 2/17/08 11:25 PM Thank you! I needed some help on that one too! S23	Null

8.12.3 Week 7 -Question 1-Thread 17 (Waters and Gasson)

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Travel Agent DFDs and Event Response list    S10   2/24/08 2:25 PM     [1]
Travel Agent Functional Decomposition Diag   S10   2/24/08 2:36 PM     [2]
     RE: Travel Agent Functional Decomposition Diag   S21   2/24/08 5:47 PM   [3]
Travel Agency Context DFD S10   2/24/08 10:03 PM                       [4]
Travel Agency Event-Response List       S10   2/24/08 10:58 PM        [5]
```

Message	Behavior Type
S10 2/24/08 2:25 PM Last week I got bogged down trying to get everything "right" before I posted. This week Im taking Professor A's advice and posting as I go. I'll post each piece as I complete it.	Null

Feedback is welcome and appreciated. Thanks! S10	P-K-E
S10 2/24/08 2:36 PM Please find attached my decomposition diagram: It seems very simple, but from the readings I think that's the point? I limited myself to the three process names Whitten and Bentley recommend on page 324, Processs, Respond to, and Generate. This limited the things I could include, but I think that's probably a good way to get rid of things that aren't really processes? Any feedback would be welcome! S10	Contributor P-K-E
S21 2/24/08 5:47 PM I like your decomposition diagram. It was easy to follow and everything made sense. Those are definitely important processes in a system. I know what you mean about posting while going along this week. All of these diagrams are hard to keep track of. Good job.	facilitator
S10 2/24/08 10:03 PM This is a pretty bare bones model, so please let me know if you think there's anything I should add or change. Thanks! S10	P-K-E
S10 2/24/08 10:58 PM Please find attached my Event-Response list. The event-response list seemed to me a combination and simplification of all of the other diagrams we've done Thus, far. In the attached list I used the processes from my Functional Decomposition Diagram as the responses when possible. I ended up with a very simplified list version of my ERD. I'm not sure if it's too simple, but I think I covered all the basic processes and events. Since the Response column seems to deal exclusively with responses from the system, and not from outside systems, such as airlines, credit card companies, etc... I left those things off although they're part of my ERD and Context DFD. As always, any feedback would be appreciated! S10	Contributor Contributor P-K-E

8.12.4 Week 7 -Question 1-Thread 17 (Anderson & Krathwohl)

Travel Agent DFDs and Event Response list   S10   2/24/08 2:25 PM   [1]
Travel Agent Functional Decomposition Diag   S10   2/24/08 2:36 PM   [2]
       RE: Travel Agent Functional Decomposition Diag   S21   2/24/08 5:47 PM   [3]
Travel Agency Context DFD S10   2/24/08 10:03 PM   [4]
Travel Agency Event-Response List   S10   2/24/08 10:58 PM   [5]

Message	Content Analysis of message Anderson and Krathwohl
S10 2/24/08 2:25 PM Last week I got bogged down trying to get everything "right" before I posted. This week Im taking Professor A's advice and posting as I go. I'll post each piece as I complete it. Feedback is welcome and appreciated. Thanks! S10	Null
S10 2/24/08 2:36 PM Please find attached my decomposition diagram: It seems very simple, but from the readings I think that's the point? I limited myself to the three process names Whitten and Bentley recommend on page 324, Processs, Respond to, and Generate. This limited the things I could include, but I think that's probably a good way to get rid of things that aren't really processes?	Understand(explain) Understand(explain)

Any feedback would be welcome! S10	Understand(infer)
S21 2/24/08 5:47 PM I like your decomposition diagram. It was easy to follow and everything made sense. Those are definitely important processes in a system. I know what you mean about posting while going along this week. All of these diagrams are hard to keep track of. Good job.	Evaluate(critique)
S10 2/24/08 10:03 PM This is a pretty bare bones model, so please let me know if you think there's anything I should add or change. Thanks! S10	Evaluate(critique)
S10 2/24/08 10:58 PM Please find attached my Event-Response list. The event-response list seemed to me a combination and simplification of all of the other diagrams we've done Thus, far. In the attached list **I used the processes from my Functional Decomposition Diagram as the responses** when possible. I ended up with a very simplified list version of my ERD. I'm not sure if it's too simple, but I think I covered all the basic processes and events. Since the Response column seems to deal exclusively with responses from the system, and not from outside systems, such as airlines, credit card companies, etc... **I left those things off although they're part of my ERD and Context DFD**. As always, any feedback would be appreciated! S10	Understand(summarize) Understand(compare) Understand(compare)

8.12.5 Week 1 -Question 2-Thread 12 (Waters and Gasson)

Message	Behavior Type
S1 1/10/08 8:55 PM Question: How and why are process design specifications important when an information system solution includes the licensing of a software package (or packages) that will be integrated into the overall solution? In other words, if you are licensing the system (or part of it) rather than writing the software itself, what is the relevance of having a process design specification? S1's Answer: Process design specifications are important for several reasons. First, drawing up the design specifications ensures that end user's needs have been analyzed because the specifications can't be written up unless the need has been defined. Need here would be defined as how the intended software purchased would match and integrate within the overall information system in order to perform its' intended function.	Prelude
With the need defined and the design specifications written, a product can be sought that matches those specific design criteria. The process design specifications are essential because they define the end user's expectations of how the software will fit within the overall information architecture. When a software package is licensed, it means that the end user is going to pay either a single or several licensing fees with the expectation that the software, as purchased, will fit within the purchaser's information architecture. Without the design specifications, it would be difficult to find the needed software because what would be considered "an exact match" would not be defined. Ultimately, if the match isn't "exact," it is still	Contributor

likely that the purchaser could tweak the existing system to match the licensed software, but the specifications would still be required so that the amount of "tweaking" required could be understood up front.	Contributor
From a legal perspective, a licensing agreement is a contract to allow repeated use of a purchased product. The process design specifications set forth the parties expectations as to how the purchased program is to be used and define what would be considered satisfactory performance. Without such specifications, it would be difficult to determine whether the parties expectations have been met.	Contributor
Question continued: As a further "real world" example, consider someone who sets up a new business or non-profit. They take a trip over to the local office supply store and pick up a copy of QuickBooks. Should they have had something akin to a process design specification before whipping out the credit card to buy the software?	Contributor
S1's Answer Continued: In this example, the buyer should have something akin to a process design specification before purchasing "QuickBooks." The process design specification doesn't have to be complex and the level of complexity will depend up the ultimate end use of the purchased product.	Contributor
So long as the end user has analyzed the software's capabilities and thought about how the software product will be used within the context of the business model then that is enough. The whole process can be done in the purchasers head in the case of a small business or not-for profit. S1 Respectfully Submitted,	Contributor
S19 1/12/08 10:27 PM S1, Thanks for pointing out that the process design specification doesn't have to be complex!	V-A
I know that I've been bogged down in what drawing up a process design specification would entail. It seems like a very long and involved process**. But, if the person using the Quickbooks is just a small business operator, it could (hypothetically) be as simple as checking the computer system against the program requirements** and making sure the product would actually answer the business need.	Facilitator
S2 1/13/08 2:51 PM S1, Your point that "Ultimately, if the match isn't "exact," it is still likely that the purchaser could tweak the existing system to match the licensed software, but the specifications would still be required so that the amount of "tweaking" required could be understood up front. is critical. Given that software matches are never exact, the process design specifications would be crucial, as you suggest.	V-A
The more that technicians are not "blind-sided" by inconsistencies between old and new system specifications and processes, the more smoothly the transition and transformation can take place. S2	Facilitator
S13 1/13/08 2:58 PM I agree with your second point on keeping it simple!	V-A
I remember when my friend's company had to make the transition to new bookkeeping software. Rather than becoming overwhelmed, they hired a consultant and took training courses on the new program. Luckily, my fiance (the one in charge of the new program), picked it up quickly and the company has benefited greatly!	Contributor

8.12.6 Week 1 -Question 2-Thread 12 (Anderson & Krathwohl)

Design Specifications	S1 1/10/08 8:55 PM	[1]
RE: Design Specifications	S19 1/12/08 10:27 PM	[2]
RE: Design Specifications	S2 1/13/08 2:51 PM	[3]
RE: Design Specifications	S13 1/13/08 2:58 PM	[4]

Message	Content Analysis of message Anderson and Krathwohl
S1 1/10/08 8:55 PM Question: How and why are process design specifications important when an information system solution includes the licensing of a software package (or packages) that will be integrated into the overall solution? In other words, if you are licensing the system (or part of it) rather than writing the software itself, what is the relevance of having a process design specification?	Prelude
S1's Answer: Process design specifications are important for several reasons. First, drawing up the design specifications ensures that end user's needs have been analyzed because the specifications can't be written up unless the need has been defined. Need here would be defined as how the intended software purchased would match and integrate within the overall information system in order to perform its' intended function.	Understand(explain)
With the need defined and the design specifications written, a product can be sought that matches those specific design criteria. **The process design specifications are essential because they define the end user's expectations of how the software will fit within the overall information architecture.**	Understand(explain)
When a software package is licensed, it means that the end user is going to pay either a single or several licensing fees with the expectation that the software, as purchased, will fit within the purchaser's information architecture. **Without the design specifications, it would be difficult to find the needed software because what would be considered "an exact match" would not be defined**. Ultimately, if the match isn't "exact," it is still likely that the purchaser could tweak the existing system to match the licensed software, but the specifications would still be required so that the amount of "tweaking" required could be understood up front.	Understand(explain)
From a legal perspective, a licensing agreement is a contract to allow repeated use of a purchased product. The process design specifications set forth the parties expectations as to how the purchased program is to be used and define what would be considered satisfactory performance. Without such specifications, it would be difficult to determine whether the parties expectations have been met.	Understand(Compare)
Question continued: As a further "real world" example, consider someone who sets up a new business or non-profit. They take a trip over to the local office supply store and pick up a copy of QuickBooks. Should they have had something akin to a process design specification before whipping out the credit card to buy the software?	
S1's Answer Continued: In this example, the buyer should have something akin to a process design specification before purchasing "QuickBooks." The process design specification doesn't have to be complex and the level of complexity will depend up the ultimate end use of the purchased product.	Understand(compare)
So long as the end user has analyzed the software's capabilities and thought about how the software product will be used within the context of the business model then that is enough. The whole process can be done in the purchasers head in the case of a small business or not-for profit. S1 Respectfully Submitted,	Understand(explain)
S19 1/12/08 10:27 PM	

S1, Thanks for pointing out that the process design specification doesn't have to be complex! I know that I've been bogged down in what drawing up a process design specification would entail. It seems like a very long and involved process.	Understand(explain)
But, if the person using the Quickbooks is just a small business operator, it could (hypothetically) be as simple as checking the computer system against the program requirements and making sure the product would actually answer the business need.	Evaluate(Critique)
S2 1/13/08 2:51 PM S1, Your point that "Ultimately, if the match isn't "exact," it is still likely that the purchaser could tweak the existing system to match the licensed software, but the specifications would still be required so that the amount of "tweaking" required could be understood up front. is critical. Given that software matches are never exact, the process design specifications would be crucial, as you suggest.	Evaluate (critique)
The more that technicians are not "blind-sided" by inconsistencies between old and new system specifications and processes, the more smoothly the transition and transformation cantake place. S2	Understand(explain)
S13 1/13/08 2:58 PM I agree with your second point on keeping it simple! I remember when my friend's company had to make the transition to new bookkeeping software. Rather than becoming overwhelmed, they hired a consultant and took training courses on the new program. Luckily, my fiance (the one in charge of the new program), picked it up quickly and the company has benefited greatly!	Understand(exemplify)

8.12.7 Week 1 -Question 1-Thread 10 (Waters and Gasson)

System analyst as a problem solver   S20 1/10/08 10:55 AM   [1]
       RE: System analyst as a problem solver   S16 1/10/08 5:13 PM   [2]
            RE: System analyst as a problem solver   S24 1/11/08 1:47 PM [3]

Message	Behavior Type
S20 1/10/08 10:55 AM Systems development as a problem-solving technique is a vital tool for system analysts. However, the system described in the Bentley & Whitten text is not the only model available. The Department of Health and Human Services – USA (2005) created a report describing different methodologies that Centers for Medicare and Medicaid Services (CMS) may use for system development.	Complicator
These methodologies include Waterfall, Prototyping, Incremental, Spiral, and Rapid Application Development (RAD). For each methodology, the method, its strengths and weaknesses, and most and least applicable situations are described. There are a huge variety of options just within the realm of system development for solving problems.	Complicator
Outside of the systems development realm, I agree with many of my classmates in that effective communication, proper training, and documentation and data analysis can all serve to solve problems.	V-A
Many times we may think that a problem (a lack of smooth work flow within a business or non-profit organization due to an inefficient or outdated process) must be due to the information system lacking in something. However, redundant or inefficient processes within the system may be the culprit, and adding any new system developments may only complicate the problem. An open communication system between all stakeholders,	

and a systems analyst who can properly interpret these communications to discover common problems, can lead to solutions that may not require the use of the system development process, and may be a solution itself (the elimination or minimization of the problem within a business or non-profit organization). Department of Health and Human Services (2005). *Selecting a development approach.* Retrieved January 10, 2008 from http://www.cms.hhs.gov/SystemLifecycleFramework/Downloads/SelectingDevelopment Approach.pdf	Facilitator
S16 1/10/08 5:13 PM Is there a fine line between "redundant" processes and good backup procedures? An experienced systems analyst might be required to decide at what point extra steps are necessary. While a system might function quite elegantly without certain steps, perhaps these steps enhance communication between components of the system or serve some other purpose such as record-keeping. Redundant is a very interesting word.	Facilitator
S24 1/11/08 1:47 PM **Author:** S24 Reading S20's post and S16's comment, I'm reminded of that old gag where someone takes apart their car, puts it back together, has a few pieces left over, yet somehow the vehicle still runs! Clearly, it is part of the System Analysts duties to know how to take a system apart and put it back together, exam any parts that stakeholders have told him might not be useful. Sometimes it turns out that, yes, these parts were outdated and just in the system because they were always in the system and other times you find that they are key components to something unrelated to one stakeholder's job but very important to anothers! A system analyst has to be very good at looking at the little pieces and details (data) AND the big picture (information system) and understand them both separately and together at the same time!	V-A Contributor facilitator

8.12.8 Week 1 -Question 1-Thread 10 (Anderson & Krathwohl)

System analyst as a problem solver   S20 1/10/08 10:55 AM   [1]
       RE: System analyst as a problem solver   S16 1/10/08 5:13 PM   [2]
            RE: System analyst as a problem solver   S24 1/11/08 1:47 PM   [3]

Message	Content Analysis of message Anderson and Krathwohl
S20 1/10/08 10:55 AM Systems development as a problem-solving technique is a vital tool for system analysts. However, the system described in the Bentley & Whitten text is not the only model available. The Department of Health and Human Services – USA (2005) created a report describing different methodologies that Centers for Medicare and Medicaid Services (CMS) may use for system development.	Evaluate(critique)
These methodologies include Waterfall, Prototyping, Incremental, Spiral, and Rapid Application Development (RAD). For each methodology, the method, its strengths and weaknesses, and most and least applicable situations are described. There are a huge variety of options just within the realm of system development for solving problems.	Evaluate(critique)
Outside of the systems development realm, I agree with many of my classmates in that effective communication, proper training, and documentation and data analysis can all serve to solve problems.	Analyze(Differentiate)

Many times we may think that a problem (a lack of smooth work flow within a business or non-profit organization due to an inefficient or outdated process) must be due to the information system lacking in something. **However, redundant or inefficient processes within the system may be the culprit, and adding any new system developments may only complicate the problem**. An open communication system between all stakeholders, and a systems analyst who can properly interpret these communications to discover common problems, can lead to solutions that may not require the use of the system development process, and may be a solution itself (the elimination or minimization of the problem within a business or non-profit organization). Department of Health and Human Services (2005). *Selecting a development approach.* Retrieved January 10, 2008 from http://www.cms.hhs.gov/SystemLifecycleFramework/Downloads/SelectingDevelopment Approach.pdf	Analyze(Organize)
S16 1/10/08 5:13 PM Is there a fine line between "redundant" processes and good backup procedures? An experienced systems analyst might be required to decide at what point extra steps are necessary. While a system might function quite elegantly without certain steps, perhaps these steps enhance communication between components of the system or serve some other purpose such as record-keeping. Redundant is a very interesting word.	Evaluate(critique)
S24 1/11/08 1:47 PM **Author:** S24 Reading S20's post and S16's comment, I'm reminded of that old gag where someone takes apart their car, puts it back together, has a few pieces left over, yet somehow the vehicle still runs! Clearly, it is part of the System Analysts duties to know how to take a system apart and put it back together, exam any parts that stakeholders have told him might not be useful. Sometimes it turns out that, yes, these parts were outdated and just in the system because they were always in the system and other times you find that they are key components to something unrelated to one stakeholder's job but very important to anothers! A system analyst has to be very good at looking at the little pieces and details (data) AND the big picture (information system) and understand them both separately and together at the same time!	Understand(compare) Understand(explain) Analyze(Organize)

8.12.9 Week 1 -Question 2-Thread 19 (Waters and Gasson)

Process Design Specifications   S11 1/11/08 8:14 PM   [1]
    RE: Process Design Specifications S12 1/13/08 12:14 PM   [2]
        Works Cited   S11 1/13/08 2:55 PM   [3]

Message	Behavior Type
S11 1/11/08 8:14 PM It seems that having a process design specification in place prior to licensing, or purchasing, software plays a large role in the overall decision to do so.	Contributor
Any new non-prophet, or business, should put in place some sort of documentation on the specific business requirements that the organization intends to adhere to. Whitten and Bentley claim that designers should first look at "business processes through the users' view" (54). By doing so the designer can effectively eliminate processes that can be automated and hence increase efficiency in day to day business processes (Whitten & Bentley, 2007, 54).	Contributor
With the process design specifications in place designers become more able in envisioning a system that adheres most to the daily business tasks and are able to	

choose software that is most appropriate for daily processes to be performed. Of course, in purchasing software Whitten and Bentley point out that some "business processes must usually be changed or adapted to work with the software" (54). If the process design specification is in place prior to the purchasing of software system owners are allowed the foresight to know how to change certain processes, or perhaps illuminate some processes.	Contributor
The advantage of knowing what process changes will need to take place prior to the initiation of new software is obvious. **In the "real world" example, someone who merely opts to pick up a copy of Quickbooks may overlook some of these process changes and find that they might have to rework the entire procedure around the new software might lose money** or efficiency without having a process design specification in place.	Facilitator
To add to this notion, programs such as Quickbooks offer several different versions which could drastically hinder productivity and cost if an incompatable version is purchased. A process design specification could eliminate, or reduce, the negative effects of an ill-planned software choice.	Complicator
S12 1/13/08 12:14 PM I agree with you that systems design specifications should be in place before considering any new software. An analogy could be purchasing a stove or a refrigerator for you kitchen without first measuring the space that it would occupy.	V-A Contributor
S11 1/13/08 2:55 PM Whitten, J. L., & Bentley, L. D. (2007*). Systems analysis & design method* (7th ed.). New York: McGraw-Hill/Irwin.	

8.12.10 Week 1 -Question 2-Thread 19 (Anderson & Krathwohl)

Process Design Specifications   S11 1/11/08 8:14 PM   [1]
        RE: Process Design Specifications S12 1/13/08 12:14 PM   [2]
        Works Cited   S11 1/13/08 2:55 PM   [3]

Message	Content Analysis of message Anderson and Krathwohl
S11 1/11/08 8:14 PM It seems that having a process design specification in place prior to licensing, or purchasing, software plays a large role in the overall decision to do so.	Understand(summarize)
Any new non-prophet, or business, should put in place some sort of documentation on the specific business requirements that the organization intends to adhere to. Whitten and Bentley claim that designers should first look at "business processes through the users' view" (54). By doing so the designer can effectively eliminate processes that can be automated and hence increase efficiency in day to day business processes (Whitten & Bentley, 2007, 54).	Understand(explain)
With the process design specifications in place **designers become more able in envisioning a system that adheres most to the daily business tasks and are able to choose software that is most appropriate for daily processes to be performed**. Of course, in purchasingsoftware Whitten and Bentley point out that some "business processes must usually be changed or adapted to work with the software" (54). If the process design specification is in place prior to the purchasing of software system owners are allowed the foresight to know how to change certain processes, or perhaps illuminate some processes.	Understand(explain)

The advantage of knowing what process changes will need to take place prior to the initiation of new software is obvious. In the "real world" example, **someone who merely opts to pick up a copy of Quickbooks may overlook some of these process changes and find that they might have to rework the entire procedure around the new software** might lose money or efficiency without having a process design specification in place.	Evaluate(critique)
To add to this notion, programs such as Quickbooks offer several different versions **which could drastically hinder productivity and cost if an incompatable version is purchased**. A process design specification could eliminate, or reduce, the negative effects of an ill-planned software choice.	Create(generating)
S12 1/13/08 12:14 PM I agree with you that systems design specifications should be in place before considering any new software. An analogy could be purchasing a stove or a refrigerator for you kitchen without first measuring the space that it would occupy.	Understand(compare)
S11 1/13/08 2:55 PM Whitten, J. L., & Bentley, L. D. (2007). *Systems analysis & design method* (7th ed.). New York: McGraw-Hill/Irwin.	Null

8.13 Low message threads

	Week	Question	Thread	MESSAGES	depth	participants
28	1	1	6	2	2	2
29	2	1	10	2	2	2
30	3	1	7	2	2	2
31	6	1	14	2	2	2
32	10	1	20	2	2	2

8.13.1 Week 1 -Question 1-Thread 6 (Waters and Gasson)

System Analyst as problem solver   S24 1/9/08 10:33 PM
         RE: System Analyst as problem solver   S13 1/13/08 1:00 PM

Message	Behavior Type
S24 1/9/08 10:33 PM Apart from systems development, systems analysts can also "solve problems" by suggesting a new system, even though the old system isn't causing anyone any grief, or by introducing system modifications.	Contributor
A "problem" is not just something that users of systems complain about. A "problem" does not necessarily mean that something is broken. **A problem could just be a change that no one had thought of doing, but the systems analyst is aware of technology that has become available that would make the current system function more effciently**. Therefore, solving the problem wouldn't mean fixing something that is broken, but improving it or streamlining it in a new way.	Complicator
S13 1/13/08 1:00 PM The systems analyst seems to be an insider aware of all the ins and outs. Some people may not even realize there was a "problem" until the systems analyst presented a	Facilitator

| "solution." **This role is very valuable in keeping all members abreast of new technology and methods of improvement**. | |

8.13.2 Week 1 -Question 1-Thread 6 (Anderson & Krathwohl)

System Analyst as problem solver   S24 1/9/08 10:33 PM
      RE: System Analyst as problem solver   S13 1/13/08 1:00 PM

Message	Content Analysis of message Anderson and Krathwohl
S24 1/9/08 10:33 PM Apart from systems development, systems analysts can also "solve problems" by suggesting a new system, even though the old system isn't causing anyone any grief, or by introducing system modifications. A "problem" is not just something that users of systems complain about. A "problem" does not necessarily mean that something is broken. **A problem could just be a change that no one had thought of doing, but the systems analyst is aware of technology that has become available that would make the current system function more effciently**. Therefore, solving the problem wouldn't mean fixing something that is broken, but improving it or streamlining it in a new way.	Understand(explain) Create(Generating)
S13 1/13/08 1:00 PM The systems analyst **seems to be an insider aware of all the ins and outs**. Some people may not even realize there was a "problem" until the systems analyst presented a "solution." **This role is very valuable in keeping all members abreast of new technology and methods of improvement**.	Create

8.13.3 Week 2 -Question 1-Thread 10 (Waters and Gasson)

agile methodologies and Extreme Programming S24 1/16/08 10:06 PM
    RE: agile methodologies and Extreme Programming S15 1/20/08 2:20 PM

Message	Behavior Type
S24 1/16/08 10:06 PM Question: Are agile methods a "better way" to plan for and develop systems? I'd like you to consider systems in your degree area, either library/information science or information systems. There are clearly several pros and cons to using agile methods, specifically XP, when it comes to system design and analysis. I'm coming from a library/information science background. I can see that it would be helpful, especially for a public library, to try something like XP. The ability to get the program up and running as fast as possible is good for a group that is continually looking for support through outside funding.	Contributor
They need something to show for the time and money being spent on a project like this. The more traditional system development cycle sounds like it could take months, perhaps even years to get to the point of completion. XP appears to have the ability to get results out much quicker than that. The pro side of it is that staff could see that the issues are being addressed because the	Contributor

Message	Content Analysis
new system design would be launched quickly. But, when the program has any problems, system users might not understand the philosophy behind patches and updates. They may wonder why the program didn't work perfectly in the first place.	acilitator
One would hope the Systems Analyst could explain the XP methodology prior to the launch of the new system.	Contributor
I think the agile method is a good way to develop a system once you are an experienced systems analyst. One should already be familiar with the more traditional methiologies before one can really start altering them. I think the agile method would work well for a systems analyst working with librarians, especially librarians that might not be as comfortable discussing programming and technology.	Complicator
For example, XP does not appear to be as rigid as the Rational Unified Process (which just sounds scary). While XP does involve a bit more risk, testing, and feedback from the users, I think this "simpler" method might go over better with such a varied level of user comfort with technology.	Contributor
S15 1/20/08 2:20 PM I agree that XP would work well in a library setting. Results can be seen a lot faster and XP is flexible if the need arises or "patches or updates".	V-A

8.13.4 Week 2 -Question 1-Thread 10 (Anderson & Krathwohl)

agile methodologies and Extreme Programming S24 1/16/08 10:06 PM
     RE: agile methodologies and Extreme Programming S15 1/20/08 2:20 PM

Message	Content Analysis of message Anderson and Krathwohl
S24 1/16/08 10:06 PM Question: Are agile methods a "better way" to plan for and develop systems? I'd like you to consider systems in your degree area, either library/information science or information systems.	
There are clearly several pros and cons to using agile methods, specifically XP, when it comes to system design and analysis. I'm coming from a library/information science background. I can see that it would be helpful, especially for a public library, to try something like XP. The ability to get the program up and running as fast as possible is good for a group that is continually looking for support through outside funding.	Explain(summarize)
They need something to show for the time and money being spent on a project like this. The more traditional system development cycle sounds like it could take months, perhaps even years to get to the point of completion. XP appears to have the ability to get results out much quicker than that.	Understand(compare)
The pro side of it is that staff could see that the issues are being addressed because the new system design would be launched quickly. But, when the program has any problems, system users might not understand the philosophy behind patches and updates. They may wonder why the program didn't work perfectly in the first place.	Evaluate(critique)
One would hope the Systems Analyst could explain the XP methodology prior to the launch of the new system.	
I think the agile method is a good way to develop a system once you are an experienced systems analyst. One should already be familiar with the more traditional methiologies before one can really start altering them. I think the agile method would work well for a systems analyst working with librarians, especially	Create(planning)

librarians that might not be as comfortable discussing programming and technology.	Evaluate(critique)
For example, XP does not appear to be as rigid as the Rational Unified Process (which just sounds scary). While XP does involve a bit more risk, testing, and feedback from the users, I think this "simpler" method might go over better with such a varied level of user comfort with technology.	Evaluate(critique)
S15 1/20/08 2:20 PM I agree that XP would work well in a library setting. Results can be seen a lot faster and XP is flexible if the need arises or "patches or updates".	Understand(summarize)

8.13.5 Week 3 -Question 1-Thread 7 (Waters and Gasson)

Requirements Analysis S9 1/23/08 7:39 PM
     RE: Requirements Analysis S10 1/23/08 8:25 PM

Message	Behavior Type
S9 1/23/08 7:39 PM Requirements analysis never really ends for a project simply because the requirements needed for the project are always changing. Through the step of updating the project plan, the team should check the requirements to make sure that they have not changed in such a manner that necessitates a change of the plan.	Contributor
If the plan is implemented, even though correct, but it plans to meet the wrong requirements then the plan will fail. Checking the currentness of the requirements will save the company much time and money in the end. I look at it this way: **you can either take more time while planning the project to check the feasibility and currentness of the requirements or you can spend that time after the project has failed and also pay a lot of money to implement a new plan.** It seems logical to me that you try to always be checking on the requirements.	Facilitator
It seems to me that there are many ways to check on the requirements, all of which require interacting with the system users. Involved in the project are a variety of people: system users, system analysts, system owners, system designers and project managers. **What if there was another person added to the team whose sole purpose would be to navigate the relationships between these disparate groups. This person, who I will designate "project communicator" would communicate to the system users what the system analysts are doing and do the** same thing between all of the groups. This person's task would be to make sure that everything with the project is going according to plan.	facilitator
S10 1/23/08 8:25 PM S9, I like your idea of the "project communicator."	V-A
Although, it seems like this role might often be played by the systems analyst, Whitten and Bentley also talk about another key communicator role when discussing Joint Requirements planning on page 166. "A JRP-trained or certified analyst usually plays the role of facilitator fr a workshop that will typically run from three to five full working days." These workshops replace some more time and labor intensive methods of fact finding durring requirements discovery.	Facilitator
It seems like a similar role might be helpful durring requirements management. Although, again, this might be ideally played by a system's analyst I wonder how often that happens in the "real world" once the system is in place.	
For instance, in my library system, it seems like the there are a handful of people in the	Facilitator

IT department who each oversee certain system components which may overlap. When different outside pieces are added to the system, one of them might be the contact person, and, though they are all somewhat familiar with each part, there doesn't seem to be one person overseeing the whole kit and caboodle and communicating between the programmers, and stakeholders.	Contributor

8.13.6 Week 3 -Question 1-Thread 7 (Anderson & Krathwohl)

Requirements Analysis S9 1/23/08 7:39 PM
    RE: Requirements Analysis S10 1/23/08 8:25 PM

Message	Content Analysis of message Anderson and Krathwohl
S9 1/23/08 7:39 PM Requirements analysis never really ends for a project simply because the requirements needed for the project are always changing. Through the step of updating the project plan, the team should check the requirements to make sure that they have not changed in such a manner that necessitates a change of the plan.	Understand(summarize)
If the plan is implemented, even though correct, but it plans to meet the wrong requirements then the plan will fail. Checking the currentness of the requirements will save the company much time and money in the end. I look at it this way: **you can either take more time while planning the project to check the feasibility and currentness of the requirements or you can spend that time after the project has failed and also pay a lot of money to implement a new plan.** It seems logical to me that you try to always be checking on the requirements.	Create(planning)
It seems to me that there are many ways to check on the requirements, all of which require interacting with the system users. Involved in the project are a variety of people: system users, system analysts, system owners, system designers and project managers. **What if there was another person added to the team whose sole purpose would be to navigate the relationships between these disparate groups. This person, who I will designate "project communicator" would communicate to the system users what the system analysts are doing and do the** same thing between all of the groups. This person's task would be to make sure that everything with the project is going according to plan.	Create(Planning)
S10 1/23/08 8:25 PM S9, I like your idea of the "project communicator."	Null
Although, it seems like this role might often be played by the systems analyst, Whitten and Bentley also talk about another key communicator role when discussing Joint Requirements planning on page 166. "A JRP-trained or certified analyst usually plays the role of facilitator fr a workshop that will typically run from three to five full working days." These workshops replace some more time and labor intensive methods of fact finding durring requirements discovery.	Evaluate(critique)
It seems like a similar role might be helpful durring requirements management. Although, again, this might be ideally played by a system's analyst I wonder how often that happens in the "real world" once the system is in place.	Evaluate(critique)
For instance, in my library system, it seems like the there are a handful of people in the IT department who each oversee certain system components which may overlap. When different outside pieces are added to the system, one of them might be the contact person, and, though they are all somewhat familiar with each part, there doesn't seem to be one person overseeing the whole kit and caboodle and communicating between the programmers, and stakeholders.	Understand(exemplify)

8.13.7 Week 6 -Question 1-Thread 14 (Waters and Gasson)

ERD/Normalized S23 2/18/08 12:10 AM
    RE: ERD/Normalized S10 2/20/08 8:21 PM

Message	Behavior Type
S23 2/18/08 12:10 AM Greetings, Once I started to get the hang of this class, along came ERD. These past two weeks have been pretty tough for me but I gave it a shot. My basic understanding of ERD involves breaking the various pieces of data into simple forms. Also, normalization does not require dependencies between pieces of data. I am sure I have a long way to go on the whole ERD thing but I am up for the challenge. Attached is my final ERD and normalization charts below. Thank You S23	Contributor P-K-E
S10 2/20/08 8:21 PM Hi S23, I'm not sure if it's just me, but I wasn't able to open your file. Sorry S10	Null

8.13.8 Week 6 -Question 1-Thread 14 (Anderson & Krathwohl)

ERD/Normalized S23 2/18/08 12:10 AM
    RE: ERD/Normalized S10 2/20/08 8:21 PM

Message	Content Analysis of message Anderson and Krathwohl
S23 2/18/08 12:10 AM Greetings, Once I started to get the hang of this class, along came ERD. These past two weeks have been pretty tough for me but I gave it a shot. My basic understanding of ERD involves breaking the various pieces of data into simple forms. Also, normalization does not require dependencies between pieces of data. I am sure I have a long way to go on the whole ERD thing but I am up for the challenge. Attached is my final ERD and normalization charts below. Thank You S23	Understand(explain)
S10 2/20/08 8:21 PM Hi S23, I'm not sure if it's just me, but I wasn't able to open your file. Sorry S10	

8.13.9 Week 10 -Question 1-Thread 20 (Waters and Gasson)

Testing   S22   3/16/08 2:37 AM
    RE: Testing   S4   3/16/08 5:19 PM

Message	Behavior Type
S22 3/16/08 2:37 AM Testing should be done all throughout the development process, to catch problems as they arise, fix them, and continue to work out bugs until the system is implemented and placed into use by the consumer.	Contributor
Testing should be done by a series of checks against the system. There are three types of testing – stub testing, unit/program testing, and system testing. Stub testing is done on individual events or separate modules of a program. Unit/program testing is done once all events and modules have been coded & stub tested they can be tested as an integrated unit. This will encompass a testing of the whole program.	Contributor
Systems testing ensures application programs tested as standalone programs will work properly once integrated into the whole system. The implications of doing a test at each point is that a program will be thoroughly tested throughout all phases to ensure it will work smoothly with other programs already in place.	Contributor
By running rigorous tests this will aid in the surety that one program will properly accept input from the output of other programs. If it is successful in working harmoniously, then it is mission accomplished, if not, there is still more work to be done – its back to the drawing board.	Contributor
Testing should involve all those personnel involved form the beginning to culmination to ensure the right program is delivered to those who will use it the most. (Whitten & Bentley, p688-689.)	Contributor
S4 3/16/08 5:19 PM Having all the personnel involved throughout the testing processes is a good idea especially the end users who really are going those that are most affected by any and all changes made to the system. S4	V-A

8.13.10 Week 10 -Question 1-Thread 20 (Anderson & Krathwohl)

Testing   S22   3/16/08 2:37 AM
     RE: Testing   S4   3/16/08 5:19 PM

Message	Content Analysis of message Anderson and Krathwohl
S22 3/16/08 2:37 AM Testing should be done all throughout the development process, to catch problems as they arise, fix them, and continue to work out bugs until the system is implemented and placed into use by the consumer.	Understand(summarize)
Testing should be done by a series of checks against the system. There are three types of testing – stub testing, unit/program testing, and system testing. Stub testing is done on individual events or separate modules of a program. Unit/program testing is done once all events and modules have been coded & stub tested they can be tested as an integrated unit. This will encompass a testing of the whole program.	Understand(summarize)
Systems testing ensures application programs tested as standalone programs will work properly once integrated into the whole system. The implications of doing a test at each point is that a program will be thoroughly tested throughout all phases to ensure it will work smoothly with other programs already in place.	Understand(explain)
By running rigorous tests this will aid in the surety that one program will properly accept input from the output of other programs. If it is successful in working harmoniously, then it is mission accomplished, if not, there is still more work to be done – its back to the	

drawing board. Testing should involve all those personnel involved form the beginning to culmination to ensure the right program is delivered to those who will use it the most. (Whitten & Bentley, p688-689.)	Understand(explain)
S4 3/16/08 5:19 PM Having all the personnel involved throughout the testing processes is a good idea especially the end users who really are going those that are most affected by any and all changes made to the system. S4	Evaluate(critique)

Vita

James Waters

Education:

2009: Ph.D., Information Studies, Drexel University, PA
2002: MS., Information Systems, Drexel University, PA
1992: MSc., Occupational Psychology, University of Hertfordshire, Hatfield, UK
1979: BA, Psychology, University Of Warwick, UK

Publications

Waters, J. (2008) "Social Network Behavior, **Thought-Leaders and Knowledge Building In An Online Learning Community**," *Hawaii Intl. Conference on System Sciences (HICSS-41.*

Waters, J and Gasson, S. (2007) "**Distributed Knowledge Construction In An Online Community Of Inquiry**," *Hawaii Intl. Conference on System Sciences (HICSS-40).*

Waters, J. and Gasson, S. (2006) "**Social Engagement In An Online Community Of Inquiry**," *ICIS '06*, Milwaukee, WI

Waters, J. (2006) "**Determinants of Engagement in an Online Community of Inquiry**," *The 12th Sloan-C International Conference on Online Learning.* Orlando, Florida, Nov 8 - 10, 2006.

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O. Hasan, M. E. Atwood, J. Waters, and B. W. Char. (2004) "**A Context-Sensitive Search Mechanism,**" *8th IEEE International Multi-topic Conference (INMIC 2004),* Lahore, Pakistan, 24-26 Dec. 2004.

Experience

2002 – 2007 Research Assistant, Drexel University, College of IS&T
2000 – 2002 Teaching Assistance, Drexel University, College of IS&T
1999 – 2000 Technical Support, Flagship Systems Incorporated, Dallas, TX
1997 – 1998 IT Systems Consultant, Indefatigable Frog Limited, Coventry, UK
1996 – 1997 IT Systems Consultant, RSA Examinations Board, Coventry, UK
1994 – 1996 Evaluation Officer, BioNet Teaching and Learning Technology (TLTP) Program
1992 – 1994 Evaluation Specialist, Heriot-Watt University (Edinburgh, UK
1988 – 1989 Lead Programmer, Fraser-Williams Ltd, London, UK
1980 – 1988 Analyst/Programmer, Department of Computing Services, Metropolitan Police, London, UK