From "Sage on the Stage" to "Guide on the Side" Revisited: (Un)Covering the Content in the Learner-Centered Information Systems Course

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Abstract

This paper addresses the major issues associated with switching from a teacher-centered to a learner-centered educational paradigm in information systems courses. After opening with a discussion regarding the importance of switching our information systems courses to a learner centered paradigm, the paper next addresses: faculty attitudes that impede the switch; the function of content; the role of the teacher; and the students' responsibility for learning. Several strategies and examples are proposed which may be employed by faculty to foster a successful transition from a teacher-centered to a more learner-centered course environment.

Key Words: Teacher-Centered, Learner-Centered, Educational Paradigm, Course Content, Faculty Attitudes, Student Responsibility.

1. INTRODUCTION

The really difficult part of teaching is not organizing and presenting the content, but rather doing something that inspires students to focus on that content to become engaged.

--- Robert Leamson (2000)

As it currently stands, content, not teachers or learners, centers the instructional universe. If we aim to be learner-centered, content still needs to be a focal point of the universe, but it can no longer be the exclusive center, the only or even most important variable when it comes to instructional decision making.

--- Maryellen Weimer (2002)

The change of seasons is but a small reminder of the myriad of changes going on all around us — at ISECON, nationally, and globally. These large-scale, institutional, and even global changes necessitate a journey of discovery with new directions and paradigms.

The research-based concept of a "new" paradigm for learning in higher education was originally proposed over a decade ago. It was Alison King (1993) who first profiled the dichotomy of faculty roles ("Sage" vs. "Guide") in the classroom. In 1995, when the term "paradigm shift" was all the rage, Barr and Tagg extended King's thesis regarding the role of the professor to the entire college by describing a shift from an instructional paradigm to a learning paradigm. Then in 1997, Smith and Waller set forth over a dozen examples of changing paradigms for learning. More recently, Weimer (2002) provided a comprehensive work on the topic of learner-centered teaching in the college and university classroom, Fink (2003) echoed the need for moving from a content-centered to a learner-centered paradigm, Bain (2004) uncovered the effectiveness of challenging students' existing models or paradigms, helping them transform existing understandings into better, more accurate models of truth, and Richlin (2006) provided a compendium of research-based methods to construct college courses to facilitate, assess, and document student learning.

So why now? Why the emphasis on changing our teaching methods from one-dimensional, unidirectional teaching in which faculty provide students with content to multidimensional, multidirectional teaching and learning in which the entire learning community is responsible for both teaching and learning? Beyond mere calls for accountability put forth by national and regional accrediting agencies, perhaps it's partially because we now live in a rapidly changing, interconnected world, with increasingly complex problems that need to be solved. As Nicholas Taleb (2007) recently put forth, we have moved from a stable agrarian society to an increasingly fast-paced technologically-based global society with populations concentrated in urban areas in which the impact of unexpected events (e.g.; 9/11, the New Orleans floods, and the recent Myanmar cyclones) that have an effect on the world grows much larger. These events also appear to occur more frequently because events that might have created only a small ripple in a simpler time can now create widespread havoc in our interdependent world characterized by virtually instant communication.

We now recognize and affirm that higher education contributes most to society and is most faithful to its own deepest purposes when it seeks to use its considerable intellectual and cultural resources to prepare students for lives of significance and responsibility. We seek to develop in our students adequate professional preparation coupled with the ability and desire to join others in an arena of mutual respect to explore, probe, and engage in our increasingly global cultural and intellectual heritage. In doing so, our students should become both enabled and disposed to both address and work toward the solution of the major problems of our times.

2. LEARNER-CENTERED INFORMATION SYSTEMS COURSES

Earlier this year Saulnier, et al (2008) outlined the basic constructs of the learner-centered paradigm as it applies to information systems courses, and Landry, et al (2008) made the case for the learner-centered paradigm being profoundly important for information systems education. Being learner-centered means focusing our attention squarely on student learning: what the student is learning, how the student is learning, the conditions under which the student is learning, whether the student is retaining and applying the learning, and how current learning positions the student for future learning. Learner-centered teaching shifts the responsibility for learning to the students and away from the teacher -- when instruction is learner-centered the focus is on what students, not teachers, are doing. Because the instructional action now features students, this learner-centered orientation accepts, cultivates, and builds on the ultimate responsibility students have for learning.

Many faculty resist this shift, primarily because it forces them to change the way they think about their profession. They find it threatening to give up some of their control and power -- in the learner-centered approach faculty are no longer the sole content expert. Additionally, many faculty are not at the point in their own "teaching development" to entertain these new ideas, particularly the notion that they have to teach less content and include learning skills and strategies in their classes.

But the faculty attitude that most strongly inhibits the shift to a more learner-centered paradigm is the belief that teaching "learning how to learn" skills significantly dilutes the intellectual currency of the class. Their belief is that students should already know how to learn, think, criticize, and form opinions. Students should have learned these skills elsewhere, and if they have not learned them it is the students' problem, not the teachers, to solve. Faculty believe that teaching such skills is not their job, although they do acknowledge that they are frequently blamed for students graduating without the critical thinking skills the students' employers expect.

But this shift in faculty focus needs to occur. Faculty need to develop an integrated, coherent philosophy of education which focuses on students' long-term learning needs. They need to make changes in their courses slowly and systematically, with specific student learning goals in mind. They should expect to be engaged in a trial and error process in which they set realistic

expectations for success based on improved student academic performance. In the process faculty need to develop a deeper and more accurate self-knowledge regarding their teaching competency, seeking feedback from their students, colleagues, and experts on teaching and learning. This feedback needs to be specific to the student learning goal at hand, not clouded by other course factors, and the faculty need to listen to the feedback.

3. THE FUNCTION OF CONTENT

Another widely held faculty belief that impedes the shift to a more learner-centered paradigm is the need to cover more content. If we perceive that covering content is a value that we (or others that we teach with) adhere to, then having the discretion to delete some content is not easy to do. But if we have to "cover" a lot of content then it is not possible to "uncover" much of it at deep levels of understanding and learning.

Our need to cover content promotes the use of simple rote memory skills on the part of our students because that's all that they have time to do. There are numerous studies that show students retain little of the content that they cover in classes, but this fact has not had much impact on the way teaching and learning take place. Studies also show that students do learn a great deal of facts, but that these facts do not translate to the students being able to show what they understand.

Teachers often see the classroom as a dichotomy where they either cover the content or have the students engage in some active learning activity. These two approaches should not necessarily be seen as mutually exclusive. For the majority of learners, both students and faculty, content is learned at a deep level by experiencing it – using it. The role of the teacher is to create a synergy of content and learning together. In designing course activities for our students to interact with the content we need to ask ourselves, "What do our students most need to be successful with the course content? How do we get content to move from an end to a means?" Our educational goal is to have the course experience cause a qualitative change in the student's way of seeing, experiencing,

understanding, and conceptualizing something in the real world as opposed to a qualitative change in the amount of knowledge possessed.

There is simply too much knowledge today for our students to learn everything that they need to know. We need to think about our teaching as one step in the life long process of learning that our students will need to engage in – not as a terminal experience in itself. If we do not teach our students this lifelong learning viewpoint by our own example, they will not adopt this viewpoint. The reality is that our students will have to relearn much of what they are taught due to the ever changing nature of our knowledge. Continual learning must viewed as at the heart of any professional life, both for our students and for us as well.

Thus, content is not to be "covered" – it is used as a vehicle for students to develop their learning skills and strategies, both in general and specific to the content. This is consistent with the Constructivist approach to learning in which learners are seen as constructing their own knowledge/meaning rather than passively receiving it. Constructivism recognizes that learning occurs most often in a social setting; thus, the formation of a classroom or online community is vital to student success. In this community setting learners raise their own questions and generate their own hypotheses, seeking feedback from their fellow learners, both students and faculty, in testing their hypotheses.

Content is used at a metacognitive level to promote student self-awareness. Content can and should be used to teach students about learning, to develop student learning skills; i.e., a repertoire of learning strategies both general and content specific. Helping students understand how they learn best and developing confidence in their abilities as learners is a key component of learner-centered teaching. Helping students identify their strengths and weaknesses as learners and helping them develop ways to use their strengths and improve their weaknesses is vital to this approach.

In this rapidly changing and evolving world in which we live, teaching as the transferring of information is becoming obsolete. Content

remains important, but it is no longer of sole importance – information management skills are at least as important as information acquisition skills.

Active, first hand student experience is of vital importance to student learning. The only effective way to learn how to think critically about a subject is to engage in the process of critical thought about the subject. The best place to teach test taking skills is in a content class where authentic testing situations occur. And the best way to teach analysis and design skills is in an authentic environment in which the students engage the systems users in analyzing user requirements and constructing systems to meet the users' information needs. Teaching these learning processes in isolation from content is virtually pointless.

4. THE ROLE OF THE TEACHER

What do we need to do to help students better learn our content? Initially, we need to recognize the developmental nature of our learners; that their understanding of their own learning process is a work in progress, and that it is in their best interest to be taught how to be a life-long learner.

Our role as educators needs to be to involve our students in the process of acquiring and retaining information, and to involve our students in an examination of the skills and strategies involved in the processes. We need to engage in serious ongoing reflection on how our actions both in and out of the classroom impact student learning. The role of the teacher in promoting student learning is a very different role that the one most teachers have embraced.

Perhaps the most important initial course question involves the issue of control and power in the classroom. If our goal is to produce self-directed learners capable of defining their own learning objectives and teaching themselves what they need to learn in order to reach their objectives, then we should not be surprised that we will need to teach them how to do so. And what better way to teach them than through their experience in our courses.

In the teacher-centered traditional course it is the teacher who decides such fundamental issues as what students learn, the pace of content coverage, the structure of assignments, the evaluation criteria, the course policies and conditions, and the flow of communication. The course syllabus usually addresses most of these issues, and the syllabus is usually a document not subject for negotiation. In the traditional course it is the teacher who makes most if not all of the important decisions about learning.

But what is the connection between our classroom/course policies and how they support student learning? Should it come as a surprise that in an environment in which we assume the control of the learning environment that our students learn very little about self-directed learning?

In the teacher-centered course teachers assume control because they believe that students cannot be trusted to make decisions about learning. Teachers often believe that students lack the good study skills or intelligence to make the decisions, or that the students are not well prepared to do so. Teachers often posit that their students are only interested in grades, that they do not care about learning, or that the students are not even interested in the content area. The truth is that our students need instruction on how to take more control of their learning, but it is not a hopeless situation. Teachers make all of these decisions because they always have, but does such a process benefit student learning? Do teachers making these decisions benefit the teacher more than the learner?

There are very real benefits to be realized by bringing our students into the process of determining the direction of our courses. Letting students make decisions is tantamount to giving our students responsibility for those decisions, thus providing them with increased responsibility for their own learning. And asking for student input regarding course policies provides students with a sense of empowerment and responsibility without necessarily letting students make the decisions. Empowering students to make a few decisions is not the same as letting them make all of the decisions; for example, letting students choose which assignments

while the teacher can still control the list of available assignments and the parameters of each assignment. While it is true that our students prefer a teacher-centered classroom, when the teachers refuse to do so the students will reluctantly do so and thus assume more responsibility for learning in the process.

The real benefits of a learner-centered classroom that shares power is that the course is owned not just by the course instructor, but also by the student. It avoids the "teacher" vs. "student" attitude by creating a better learning environment. The class belongs to everyone. If a learning lesson does not work we all fix it together. In such an environment students spend more time on task, yielding greater learning, as students ultimately discover that knowledge is indeed power. And seeing such student energy the teacher is frequently energized.

There are many time honored techniques that as teachers we can use in such a shared classroom. We can employ short time periods in class to teach specific learning skills, targeting the skills our students need the most when the "teaching/learning moment" is at hand. We can use summary writing as a study tool, asking students to summarize what they believe will be on the forthcoming exam. We can introduce specific study skills support material as in-class or online handouts to assist our students in learning the material and we can bring in former students to share how they best studied and learned in our class. After handing back our exams and assignments, we can have our students write about their exam/assignment errors, specifically why they made the errors and what they can do to improve in the future. Regarding group work, we can ask our students to identify their best and worst experiences in group work and prompt them to adopt group behaviors consistent with their best experiences. We can have our students teach each other.

In a perfect educational system the teachers would be phased out as our students become autonomous, self-directed learners. Unfortunately, for most of our students that goal of becoming a self-directed learner is many years away. So our goal as teachers is to design a set of course activities and assignments that responsibly provide our students with more control over the decisions that affect their learning. We need to answer for ourselves, given the characteristics of our students, what specifics we should hand over to our students to do by their own choosing. We need to determine when we hand over certain responsibilities to our students, for the key is to do so gradually consistent with their learning. And we need to determine how much freedom and power is enough, and as teachers decide for ourselves whether we need to design a system in which we give more power to some students than to others based on individual student performance in assuming responsibility for their own learning.

Maryellen Weimer (2002) suggests seven principles to guide course the instructor trying to develop learner-centered classroom:

1. Teachers Do Learning Tasks Less – Assign to students some of the tasks of organizing the content, giving examples, summarizing discussions, solving problems, and drawing diagrams, charts, and graphs;

2. Teachers Do Less Telling; Students do More Discovering – Give a quiz on your syllabus and policies without going over it first; let students discover information in assigned readings without presenting it first or summarizing it later;

3. Teachers Do More Design Work – Design activities and assignments that move students to new skill levels, motivate engagement in course content by doing the work of practitioners in the discipline, and develop self-awareness of their learning of the content;

4. Faculty Do More Modeling – Demonstrate how a skilled learner (the teacher) continues to learn. Show them drafts of your articles, notes on your own reading in professional journals; talk aloud as you solve a problem, thereby revealing and modeling your own thinking process;

5. Faculty Do More to get Students Learning From and With Each Other – Create work for students to do in small groups in class;

6. Faculty Work to Create Climates for Learning – Create a climate

that promotes interaction, autonomy, and responsibility;

7. Faculty Do More with Feedback – In addition to assigning grades, use other means of providing frequent feedback to students.

5. THE ROLE OF THE STUDENT: RESPONSIBILITY FOR LEARNING

Learning skills as sophisticated as those needed to be an autonomous, self-regulating learner do not develop through the "simple" exposure to content but must be taught. Our task is an arduous one: to transform our passive students into autonomous learners.

Our challenges are many, including the reality that many of our students lack the basic skills for college. Many are also busy with other concerns such as jobs, children and membership in online communities. These challenges are further complicated by the reality that most students lack confidence in themselves as learners and consequently make unwise learning decisions. In general, students tend to procrastinate, seek easy options, and prefer extra credit points over deep learning.

In response to these challenges and to promote student responsibility, teachers have made more rules about attendance, assignment deadlines, number of required sources, word lengths in papers, and even margin sizes. We tend to rely on extrinsic motivators and frequently resort to regular quizzes on assigned readings and extra points for class participation. The short-term result of such strategies in an improvement in student performance, but the long-term result appears to be that rule-based policies and extrinsic motivators perpetuate dependent and passive learners. Our polices fail to create mature, responsible, motivated learners.

We seem to be locked in a cycle: The more structured we make the environment, the more structure students need. The more we decide for students, the more they expect us to decide. The more motivation we provide, the less they find within themselves. The more responsibility for learning we try to assume, the less they accept on their own. The more control we exert, the more restive their response. We end up with students

who have little or no commitment to and almost no respect for learning and who cannot function without structure and imposed control. (Weimer, 2002, p. 98)

But it is part of our professional responsibility as educators to produce graduates that not only recognize the need to be lifelong learners, but embrace the process of becoming so. Just how are we to move students from where they are to where we need them to be?

The remedy is not to abandon rules and structure, which indeed do produce good results. But we must understand the liabilities associated with rules and structure, use them carefully, and augment them with additional approaches that create a climate that promotes autonomous learning. Weimer (2002) suggests several strategies that we may/should employ to create a climate that produces self-regulated, intrinsically motivated learners:

1. The instructor should "make the content relevant, demonstrate its power to answer questions, and otherwise show its apparent intrigue."

2. Make the student responsible for learning decisions by relying on logical consequences of action and inaction, rather than punishment. For example, to deal with lateness, present important material or assignments early in the period that you do not repeat, rather than deduct attendance points for lateness. Do not summarize chapters if students have not read them. If they arrive unprepared, put the unread material on a test; give frequent tests.

3. Be consistent in administering policies. If your syllabus says late homework is not accepted, never accept late homework despite the heart-wrenching excuse offered by the student.

4. Involve students in a discussion of creating a climate that promotes learning. Have this discussion early in the semester.

5. Obtain feedback on the classroom climate occasionally and revisit the discussion of policies and procedures.

6. Employ practices that "encourage students to encounter themselves as learners" (p.111). Explain the purposes and benefits of assignments and projects; tell students what problems they

might run into in doing the assignments and suggest remedies. Help them with time management. With group projects, provide guidance in managing the project, handling group dynamics, and assigning individual responsibilities.

6. EXAMPLES FROM THE TRENCHES

The general strategy to adopt in developing a learner-centered classroom in any discipline is to refrain from delivering the content and instead develop specific active learning activities for the student to interact with desired content. When the individual student or the student team completes the activity, they will have effectively demonstrated their acquisition of the content. Specific examples of the deployment of this strategy may be helpful -- what follows are three specific examples that the author has employed in one of his information systems courses:

Information Systems for Competitive Advantage -- One of the key learning objectives is for students to understand that the effective application of information systems can assist the organization in obtaining a strategic competitive advantage in the industry. Using Porter's four basic competitive advantage strategies and Porter's Value Chain concept, student teams working on a semester-long simulation in an industry select a competitive advantage for their company and specify the reasons for their selection. They then assess how the selection of a competitive strategy influences the general characteristics of their company's information systems.

Small Office – Home Office (SOHO) Networks as an Example of LANS – Student teams are provided with a hypothetical case in which they need to establish a network in a three story fraternity house on campus. They are required to explain how a LAN could be used to connect all of the computers in the house, asked whether they would recommend an Ethernet, an 802.11, or some combination of both and justify their answer, and asked whether their internet connection would be dial-up, DSL, or cable modem, once again justifying their answer by indicating the factors involved in their decision making scenario.

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Enterprise Resource Planning (ERP) Systems – Students are sent via a link to the SAP web site to view a demo titled *SAP ERP: Enabling Efficient Sales Order Management.* Students then answer questions regarding the video such as (1) what benefits do ERP systems provide, citing specific examples from the video, (2) from the product demo, what type of information is available, and (3) what are some of the specific views or tabs that provide the information.

7. CONCLUSIONS

When working toward changing a paradigm, especially one that may have worked well for us as students, it is important to consider the future — what will our students' emerging careers be, what skills and knowledge are essential for them to be engaged in their professional worlds, and what paradigms might they face? Our teaching behaviors, our expectations we set for our students, and our students' learning behaviors must evolve to fit our students' futures.

We can make the change to a learner-centered paradigm if we remind ourselves that our need is to develop a coherent philosophy of education driven by the idea of student learning. What we need to do is to develop an approach, not just a set of practices, a philosophical pedagogical compass that serves as a guide to our course decision making. We can then proceed to make those changes we deem necessary in a systematic way with a specific plan in mind, recognizing that we will be embarking on a trial-and-error process. We need to set realistic expectations for success, recognizing that our process is one of continuous improvement in our students' learning.

Tagg (2003) reminds us that to change our paradigm from teaching to learning is to view education through a new lens – "seeing" our work in a different light and having diverse experiences as we and our students interact to learn. We will no longer be assuming the role of "Sage on the Stage," where students merely watch and listen and are expected to absorb information like a sponge. We will become more of a "Guide on the Side," a fellow

learner with our students, modeling the process of uncovering new knowledge and constructing meaning through the deployment of active learning techniques. For as Chickering and Gamson (1987) told us more than two decades ago:

> *Learning is not a spectator sport. Students do not learn much by just sitting in class listening to teachers, memorizing repackaged assignments, and spitting out answers. They must talk about what they are learning, write about it, relate it to past experiences, apply it to their daily lives. They must make what they learn part of themselves.*

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