

Introduction

Students are complaining, instructors are frustrated, support systems are inadequate, solutions have been tried and failed and successful change is becoming more a dream than a probable reality. Environments are complex, there are competing interests, and everyone has their own answer. Sound familiar? Of course it does. If you work in an environment that consists of more than one person than at some point in your experience, the need to find a solution to a problem has presented itself. In complex environments where there are competing interests and perspectives, the challenge expands to include multifaceted problems where even if there is strong leadership, grassroots buy-in has to be achieved if problems are to be accurately documented and evaluated and if promising solutions are to be fully imagined and implemented.

Not all education environments regularly confront complex challenges, but in distance education (DE) environments which are inextricably tied to rapid changes in technology, problems are becoming more complex as instructors are pushed to change how they teach, students are pushed to become more autonomous and technology continues to push instructors, students and what is possible. This is where systems methodology enters the playing field. **How can instructors identify realistic avenues for change? How might students react to certain changes in their learning environments?** In the example presented in this essay, we will attempt to address the questions outlined above and propose solutions to the complex problem of student support in a corporate DE training environment using Soft Systems Methodology (SSM) and some additional components of the Interpretive systems approach.

In the scenario that we will examine, adult learners in a radiology department have provided negative feedback about the online training classes and self-paced offerings provided by their software vendor. Some of their concerns include a lack of instructor support, incomplete instructions on courses recommendations and requirements, and issues with the technology used for their courses and self-paced offerings. Using the interpretive systems approach, this paper will evaluate a problem in a corporate learning system and identify prospective solutions and ways of moving forward.

In the current DE environment, criticisms against the learner support sub system have increased over a period of time. Although there has been positive feedback for some courses, the enrollment process, instructors, course designers and the information technology (IT) support staff, have all been negatively evaluated by the affected learners and the negative feedback has become increasingly common. Students have expressed displeasure with the registration process, their unfamiliarity with the Learning Management System (LMS) and technical challenges when using the virtual environment for in-class exercises and homework. Students are also not familiar with the online meeting and web conferencing software and how to smoothly move between the LMS, the virtual environment and the online web conferencing software during a synchronous course. Instructor criticisms have been balanced by positive feedback, but a common complaint is that instructors understand how the software works, but they do not have a solid understanding of healthcare environments nor how the software might impact each student's workflow. From the student perspective, use of the software must be incorporated into daily work responsibilities so knowing the step-by-step instructions to complete a task does not address the wider issue of when to use the software or how to effectively and efficiently use the software in the various departments within each healthcare organization.

The Vexing Nature of the Problem

In corporate environments, various measures are used to determine how products are selling, if they will continue to sell and what needs to be done to sell more of the product. Corporate training environments, however tangentially, have the potential to support or hinder a products adoption in the marketplace. In this healthcare business, as is the case with many businesses, the corporate training environment does not use standard academic measurements for success. Instead the same methods of measurement that are used for the wider business are also used for the training department. In our example environment, for instance, the focus is on Net Promoter Scores (NPS). Because Net Promoter Scores have become the primary method used to assess how well the business or an aspect of the business is

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doing for many corporate environments, it is not surprising that a healthcare corporate environment would employ the same measurement in a struggling economy.

The idea for net promoter scores was first introduced in a book titled, *The Ultimate Question* by Fred Reichheld.

According to the NPS website, NPS “is both a loyalty metric and a discipline for using customer feedback to fuel profitable growth in your business” (<http://www.netpromoter.com/np/index.jsp>). NPS scores are calculated based on a scale that goes from 1 – 10 with the goal being to get more 9s and 10s than lower numbers from customers rating services and products. Specifically,

NPS is based on the fundamental perspective that every company's customers can be divided into three categories: Promoters, Passives, and Detractors. By asking one simple question — How likely is it that you would recommend [Company X] to a friend or colleague? — you can track these groups and get a clear measure of your company's performance through its customers' eyes (<http://www.netpromoter.com/np/calculate.jsp>).

Promoters are those customers who would rate a company as a 9 or a 10 and are therefore considered customers who would promote the company and the company's products. Neutral respondents are those customers who rate the company as a 7 or an 8. Neutral respondents are fine with their product or service and are not expected to either promote or criticize the company. Detractors are the final group in the NPS grouping and their company ratings are between 0 and 6. The concern with detractors is that they have the potential to be voice their displeasure. This is especially vexing in a socially networked world where comments can spread faster than wildfires.

Thus, the worrisome and aggravating issue is that the disapproving feedback provided by the customers of the corporate healthcare training department has the potentially to negatively impact the healthcare company's KLAS scores and that can and does impact the bottom line. Why are KLAS scores critical to a healthcare company's bottom line? KLAS is an independent research organization that provides information and ratings on healthcare vendors. KLAS is well-known in the healthcare arena and is used by many hospitals, outpatient clinics and academic healthcare organizations to determine if they should buy various healthcare products including medical software. According to their website, KLAS,

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pronounced class, “**helps healthcare providers** make informed decisions by reporting **accurate, honest, and impartial**

vendor performance” (<http://www.klasresearch.com/About/Company.aspx>). KLAS is a formidable voice in the

healthcare market because they have a history of providing impartial data in the form of “real-time performance

ratings,” specialty reports that look at specific market segments and vendor issues in various areas, as well as custom

research for healthcare providers (<http://www.klasresearch.com/About/Company.aspx>). Access for healthcare

providers is free and vendors can have access as well by paying a fee for service with the idea being that vendors can

learn about what they are doing right and where they need improvement in addition to being able to benchmark against

other vendors who are succeeding in the marketplace. Whether a vendor supports the use of KLAS or not, healthcare

providers do use KLAS to determine where they will spend their money.

Consequently, negative feedback from customers, low NPS scores and worsening training evaluations make it probable

in the eyes of the company’s business leaders that KLAS scores could be adversely affected if the training department

does not clarify the issues, evaluate and implement solutions, and improve their NPS scores.

Description of the Current Process

The current process begins for each student once medical software has been purchased by the student’s healthcare

organization. There are some required courses, other courses that are recommended, but not required and still other

courses that may be customized based on the healthcare organization’s specific needs. All courses are remote and have

a program guide that provides detailed information about the course description, the course objectives, student pre-

requisites, time expectations, and student system requirements. Courses are managed using an LMS that serves as an

enrollments administrator, content repository and space for asynchronous instructor-student and student-student

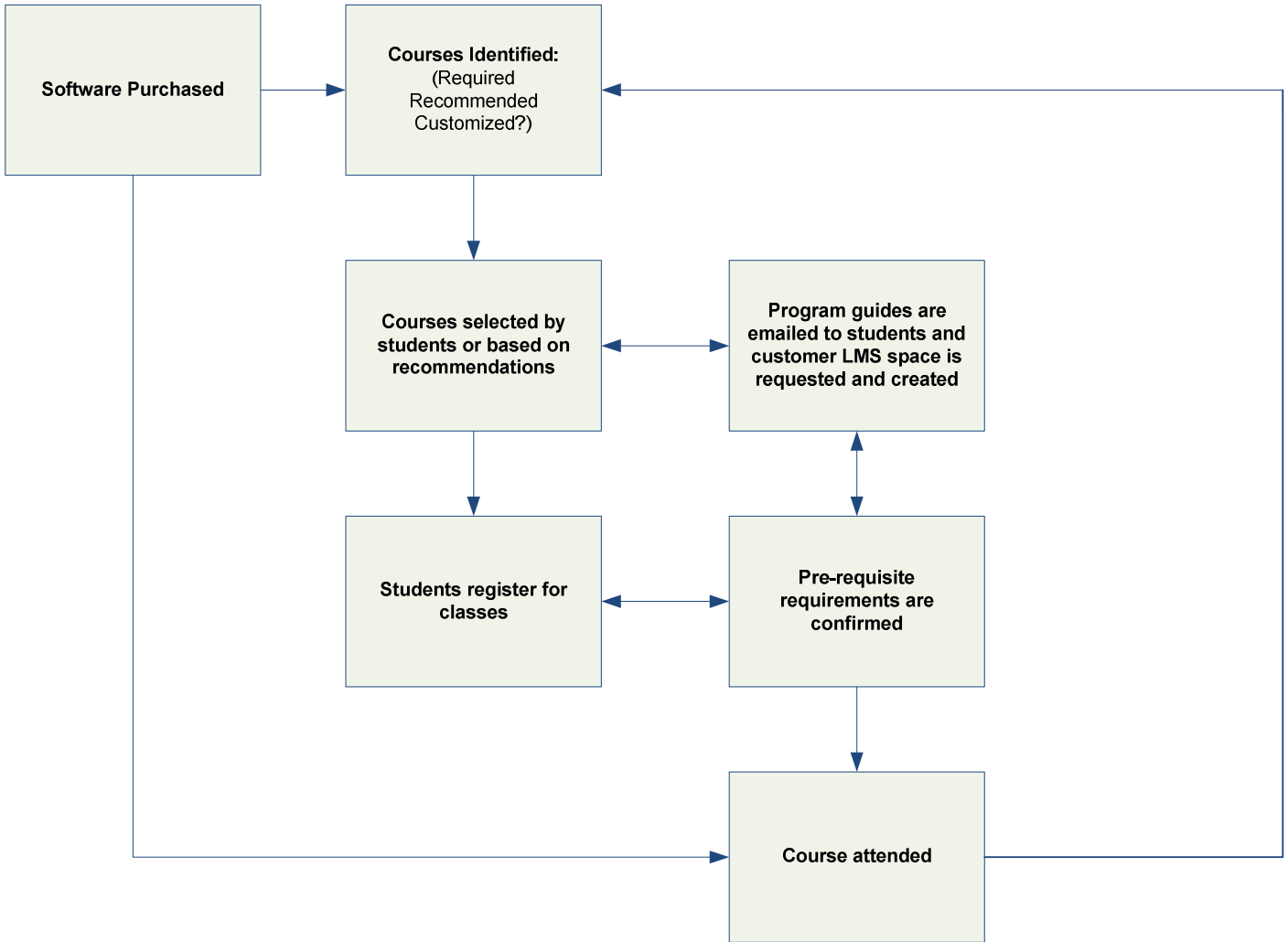
interaction. Once students have registered for classes and been approved based on meeting their pre-requisites,

courses are taught synchronously using the LMS, an online web conferencing system and a virtual software environment

that can be customized to mimic the environment that the students will be using once training has been completed.

The following activity sequence diagram illustrates the above referenced process.

Figure 1 – Current Process Activity Sequence Diagram



The table below further explains the various elements that make up this process.

Table 1 – Steps in the Learner Experience Process

| Process Steps | Description |
|---|--|
| Software purchased | Software is purchased by the customer. Software purchases may be an upgrade from a significantly older version of the same software, they may be brand new for the customer or the purchase may be a minor upgrade with some functionality updated, but many of the same features still available. |
| Courses identified | Based on the software purchased, required courses are identified and courses that might also be beneficial are recommended by the project manager assigned to the customer. |
| Courses selected | The customer selects the courses that they need to take and possibly those that they would like to take in addition to their required courses. If the course selected is not a required or a recommended course, students may be redirected to the information originally provided by their project manager. |
| Program guides provided electronically | Program guides are emailed to the customer and they are expected to read the program guides in their entirety so that they will know where to find out course availability, which courses should be taken first and the system requirements for their remote training. |
| Students register for classes | Students register for classes using an online registration system. |
| Pre-requisites confirmed | Pre-requisites are confirmed by the healthcare DE environment. Students may go back to the program guide to confirm pre-requisites and to register for different classes if needed. |
| Course attended | Students take the course and the process begins again with identifying the next course to take. |

The Larger Environment

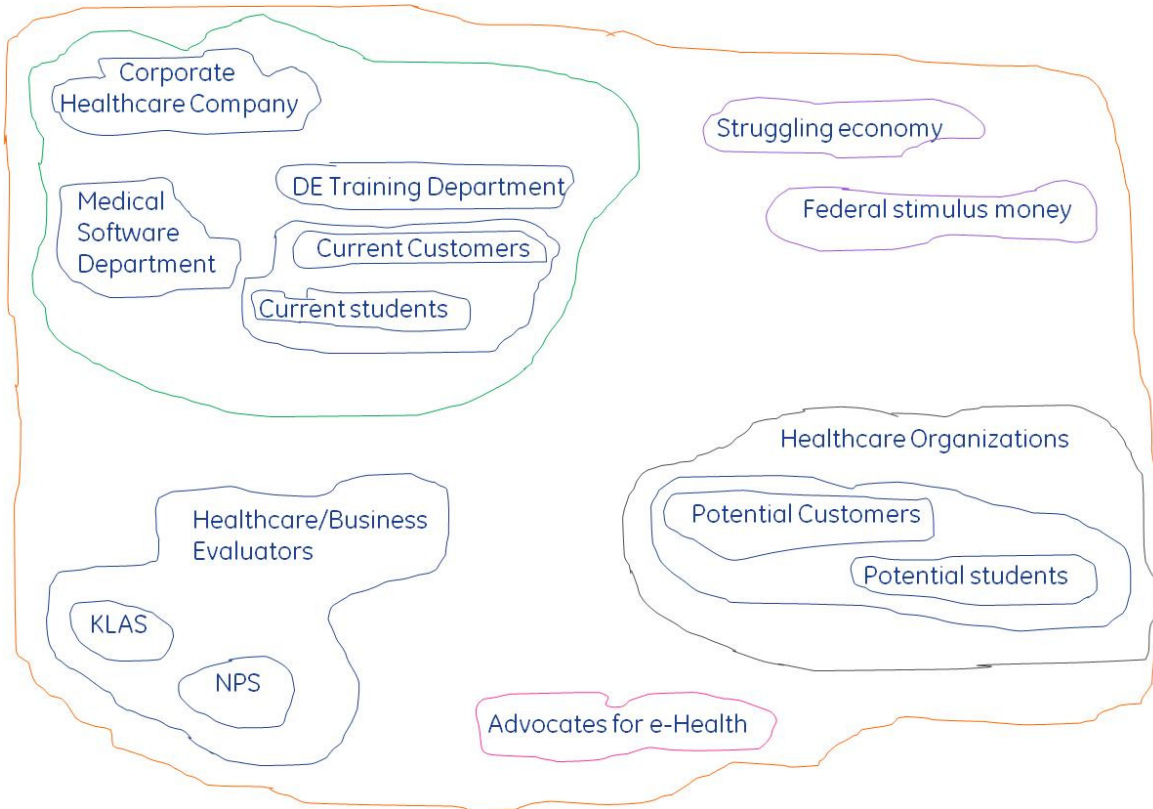
The learner experience and the learner support sub system is a smaller piece of a larger environment. Understanding this larger environment is an important step toward understanding some of the elements that may influence the learners and their perception of their experience. For example, in many instances, the learners are aware that there is a push for the adoption of electronic ways of providing healthcare. Although the economy is struggling and they may be seeing more patients with fewer staff members, Federal stimulus money specifically for the adoption of new medical software and software upgrades is pushing their organizations to add more to their plates. Namely, more time spent learning new software or learning how to do some things differently if they're upgrading to new versions of old software

systems. This push toward new and upgraded software means time away from work in already under-staffed,

overworked environments. Accordingly, learners may not approach the DE experience auspiciously, but unfavorably instead.

The larger environment for this sub system is provided in the following system map.

Figure 2 – The Larger Learner Support Sub System Environment



The items or elements contained in this system map identify the current environment that the learner experience sub system inhabits. There are various elements that may not have a direct impact on the learner support system, but that do eventually have an impact even if that impact is not readily evident. For example, advocates for e-Health proliferate in the healthcare landscape. These advocates are pushing for electronic medical records, the use of electronic health records and the use of any medical software systems that have the potential to improve physician response time, facilitate customer care and provide immediate access to patient records and information (see

<http://www.dallasnews.com/sharedcontent/dws/bus/stories/061708dnbuswebhealth.3da3ab5.html>,

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<http://www.onpointradio.org/2009/04/tracking-electronic-medical-records>,

<http://www.healthcareitnews.com/news/president-bush-continues-ehr-push-sets-national-goals>,

<http://abcnews.go.com/Health/President44/story?id=6606536&page=1>, and [http://jama.ama-](http://jama.ama-assn.org/cgi/content/extract/299/5/507)

[assn.org/cgi/content/extract/299/5/507](http://jama.ama-assn.org/cgi/content/extract/299/5/507)). As a result, even those healthcare organizations that may have previously

avoided going from paper records to electronic means of working with patient data, are now seeking software vendors

and evaluating who will provide the best products and training for their end users.

What Are Our Options?

With the information that we have, one of the first questions would probably be, “What are our options?” Certainly changes could be made to the learner sub system, but what should those changes be? The customer/students are not pleased with various parts of the process; the courses as they are currently structured, the various software applications used to provide neither the distance training nor their instructors knowledge of their environments and how their environments might impact their use of the software products. One option that can be used to address the problem is the systems approach. The interpretive systems approach, in particular, is uniquely suited to address a problem in which perceptions can be the predominant issues. The instructors’ perceptions of what the students should do and what constitutes a true learning experience and the students perceptions of their experience which may be clouded by a lack of motivation to participate will influence each groups understanding and definition of the problem of negative course feedback. The interpretive systems approach, also known as soft systems thinking, “gives pride of place to people rather than technology, structure or organization” (Jackson, 2000, p. 211). This is an important distinction because the primary area of concern “is perceptions, values, beliefs and interests” (Jackson, 2000, p. 211). In an environment with competing interests, namely that of instructors who work for one company and have directives to improve their NPS scores and students who work in a different organization and have directives to quickly incorporate new or upgraded software into their daily responsibilities, a shared vision of the problem and possible solutions is critical

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to success. A critical difference between interpretive systems approaches and functional systems approaches is best described by Jackson's (2000) discussion of C. W. Churchman. Jackson (2000) explains,

For Churchman, systems and whether they work or not are in the mind of the observer rather than in the real world. A model can only capture one possible perception of the nature of a system. Objectivity, therefore, can only rest upon open debate among holders of many different perspectives. And the results of a systems study can only receive their guarantee from the maximum participation of different stakeholders, holding various worldviews, in the design process (p. 224).

In other words, including all stakeholders in the sub system will provide a foundation upon which to build. This would be a foundation that emphasizes debate over a focus on designing the perfect and improved system. Change can be incremental and various parts of the system can be evaluated before attempting to clearly define the problem and identify a solution.

The interpretive approach is preferable to the emancipator approach as well because it does not seek to overturn the status quo. There are Federal agencies and directives that would have to be overturned, how healthcare organizations do business, the ways that healthcare businesses operate fundamentally changed and one goal would need to be to completely upend the current learner environment created by the healthcare vendor. This kind of change takes time and does not encourage consensus building. It also does not address the immediate need of the learners to have better learning experiences that they can easily apply in their current environments using technology for learning in a more intuitive and less taxing way.

Soft Systems Methodology

Soft Systems Methodology or SSM was developed by Peter Checkland with the help of his university team members.

The system was refined over the years and has led to a seven stage process that begins with learning "to provide generalized knowledge about structured occurrences" (Jackson, 2000, p. 247). As Checkland well understood, "in social

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systems the logic of the situation is usually much less significant in terms of what happens than the cultural

interconnections forged from the meanings attributed to the situation by individuals and groups” (Jackson, 2000, p. 248). Thus, when looking at a problem, there may be many root definitions or multiple ways of looking at the problem that should be considered when determining how to improve the vexing issue.

There are seven stages in Checkland’s methodology. The first and second stages are committed to expressing concerns without documenting a definitive problem with the idea being to begin to understand the issues involved. The third stage is when root definitions are identified from the various worldviews. The fourth stage is used to create models of the various root definitions and the fifth stage compares those root definitions to what is going on in the real world. The sixth stage looks at what can be changed and if those changes could be successful based on the worldviews of the participants involved and the final stage identifies next steps or actions to take to resolve the issue. Debate is a part of all of the stages and serves to provide insight into other worldviews and proposed solutions.

Because this is a discussion of possible answers to the problem of learner support, we will focus on the root definitions or worldviews of the participants in the sub system and on identifying solutions. Checkland’s system is also considered a learning model so identifying a solution is not the end of the process, but can also be a new beginning, therefore, this essay serves as a starting point for addressing the learner support issue and does not propose to dictate a specific solution.

We will begin by looking at some root definitions that came out of research on student and instructor perceptions of the problem of low feedback scores.

Table 2 – Instructor and Student Root Definitions

| | Root definition 1 (Instructor worldview) | Root definition 2 (student worldview) |
|---|--|---|
| Students are not happy with the registration and enrollment process | Students should read the program guide and pay attention the reminder emails that we send. | The program guide is confusing and no one tells you if you've registered for the wrong class until one week before when you get the reminder email to test your browser and perform the virtual environment test. |
| Students do not like the length of the courses | All courses are 4 days courses that begin after lunch and last until the close of business in order to provide enough hands on activities and to cover all of the important topics. Plus we have to spend time on terminology so that we can all be on the same page as we go through the application. | We cover information that I won't need in my job or that I can get from the online Help. Also, 4 hours for 4 days is too much time for me to be away from the floor. |
| Students are unprepared for their first class | Students are not reading their program guides. | No one is volunteering to guide me through this process and the first class in this program was awful because I didn't know which applications I was supposed to be using. |
| Students are unable to use the DE technology efficiently and effectively | Students should be computer literate and if they are not, their organizations should get them up-to-speed or send only super users to class. | We already have to learn new software, we do not want to have to learn new learning software too. |
| Students do not feel that instructors are familiar with their healthcare environments | Students should focus on knowing the steps to complete each task, they can apply to their workflow later. | Instructors should be able to explain to me how I'm going to use this software in my job. |

Checkland's SSM may not provide the answers that one hopes for, but it does have the capacity to improve understanding among different groups. Nad Connell (2001) in an article evaluating the use of SSM, provides the perfect

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example of the importance of Checkland's root definitions even if a shared worldview is not achieved. Connell (2001)

explains

Exchanges of views, although always polite, were sometimes heated, and one memorable clash of

Weltanschauungen was (so the OR practitioner discovered later) continued and eventually accommodated (if not actually resolved) at a chance meeting in the supermarket later that evening! (p. 157)

In an article published in 1985, Checkland further explains his methodology, he states that

The purpose of the debate is to uncover the different constructions people in the situation place upon the happenings and to find some kind of accommodation between different, conflicting constructions. An 'accommodation' does not eliminate conflict-which is endemic in human situations since we are all free to interpret the world in our own way-but may make purposeful action (often corporate purposeful action) possible. The object of debate, then, is to arrive at some changes which could be introduced in the problem situation, changes which are at the same time (systemically) desirable and culturally feasible (Checkland, 1985, p. 822).

Hence, the key or critical element in Soft Systems Methodology is identifying worldviews and fostering debate. The goal, then, is not to find solutions, but to help participants understand that their worldview does not dominate and may not prevail as solutions are tested and further debated.

Possible Solutions: The End and the Beginning

Based on the issues that students are complaining about and the expectations that instructors have, what are some possible solutions? There are various types of learner support that specifically address the challenges presented to DE instructors and students. Using *Learner Support in Open, Distance and Online Learning Environments* (2004) edited by J.E. Brindley, C. Walti, & O Zawacki-Richter, we will look at some solutions that may mitigate the problems identified by both students and instructors in this scenario.

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Students are not happy with the registration and enrollment process

The first is communication. Both students and instructors can benefit from understanding why a Learning Management System is used for registration and managing enrollments. The benefits to students and their companies is important to communicate when you're teaching adult students. The enrollment system can benefit students because they can manage their own learning. Having access to an LMS means that students will be able to prove completion of courses and this proof can be used to support continuing education credits. From a business perspective, having an LMS means that there is an electronic system keeping track of how many classes they must take and how many classes are still available to take. Students are not relying on instructors who may not document their class completion or who may forget that their company has paid for 80 seats, but has only used 50. How this information can be communicated to students is still open, but the importance of introducing students to the reasons for the enrollment process and registering for classes is without question. An add-on to the communication solution is to provide readily accessible email and phone support during the enrollment and registration process for each customer. As Susan Nalewaja Van Voorhis & Tina M. R. Falkner explain in their discussion of student services, "Distance education learners usually need to conduct business via email or telephone if unable to complete transactions over the web applications, which requires staff with very good oral and written communication skills" (p. 237). This will mean that instructors may need a new team member or they may need to rotate as student support during enrollment and registration periods.

Students do not like the length of the courses and students do not feel that instructors are familiar with their healthcare environments

In Linda Smith & Kristen Drago's article, Learner Support in Workplace Training, there is a section on motivation that speaks to the importance of providing courses that students will be motivated to attend and commit to. The article describes what needs to be done, "employees need a way to map training to career goals as well as organizational goals in order to find the motivation and energy needed to overcome other training challenges and to excel in learning" (p. 195). The authors also clarify the learner position, "Why should an employee invest him/herself in a training activity, particularly if participation extends beyond the normal workday or the level of effort exceeds normal job expectations?" (p. 195). Thus, for this issue, classes can be shortened by the instructors to 2 day classes that cover the same material

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for a total of 12 hours instead of 16, a separate self-paced terminology class can be provided to students or there can be

concrete examples of the various topics that solidify the connection between the use of the application and the

student's job responsibilities. In other words, instructors can focus on the why in addition to which steps are needed to

accomplish each task. This potential solution addresses both the issue of the length of the courses and the lack of

instructor knowledge of their environments. For instructors, this provides a learning activity and a challenge to learn

more about the various healthcare environments and how their software works in and impacts those environments.

Students are unprepared for their first class and students are unable to use the DE technology efficiently and effectively

The proposed solution for the aforementioned problems also seeks to address 2 problems. For these challenges,

literacy is the overriding theme. Program literacy and information technology literacy are connected by the need of

each for the other. Students need to understand their program options and expectations and they need to be able to

use all of the software associated with the program in addition to the purchased medical software. For instructors,

having well-prepared students eliminates issues during class and negative feedback when students are more frustrated

with the program and the technology than they are with their instructors who may have done a good job, but who will

inevitably receive low ratings due to the other frustrations. There are several possible solutions to these issues and the

all involve getting students up-to-speed. Requiring students to take a pre-course or orientation offering that includes an

overview of the program and how they should progress and hands-on activities that walk students through using all of

the DE software that is used to teach and manage courses.

For all of the identified concerns, a final solution would be to create either a department or to identify dedicated

individuals to provide online support services. In an article about online support services, Thompson and Hills (2005)

discuss the creation of online support services at a particular university. Their article is specific to the university that

they are describing, but they provide an excellent conclusion that is relevant to anyone seeking to add online support

services to their distance education program.

Online services offer the promise of improved levels of service for distance education students. Careful planning

and adequate resourcing, especially long-term funding and staffing, are necessary to ensure the long-term

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viability of providing worthwhile learning support services via an online medium. It is also essential that the services are researched to ensure that they are meeting the needs of students (p. 664).

For these reasons, online support services might be a long term goal of the current sub system, but probably not a viable short-term goal. In business environments, especially those that use business indicators throughout all departments, including the education and training department, short term goals with prompt feedback are used more often especially when the issue has clear implications for the bottom line. Accordingly, online support services should be included as a long term goal with the express purpose of steadily increasing positive feedback.

The above solutions are not absolute. They are attempts to create obvious next step opportunities for frustrated students and instructors. As Checkland (1985) states, "Any culture will only take purposeful action which seems 'obvious' to the people who constitute that culture. Nothing is in fact 'obvious'; things are only obvious in relation to a particular way of perceiving the world (p. 831).

Diagramming Potential Future Environments

The following diagrams represent changes to the current sub system. These diagrams are, in a sense, the loop section of Checkland's SSM in that there is an expectation that these are fluid diagrams that can and should change based on both student and instructor input.

Figure 3 - Proposed Solution Activity Sequence Diagram

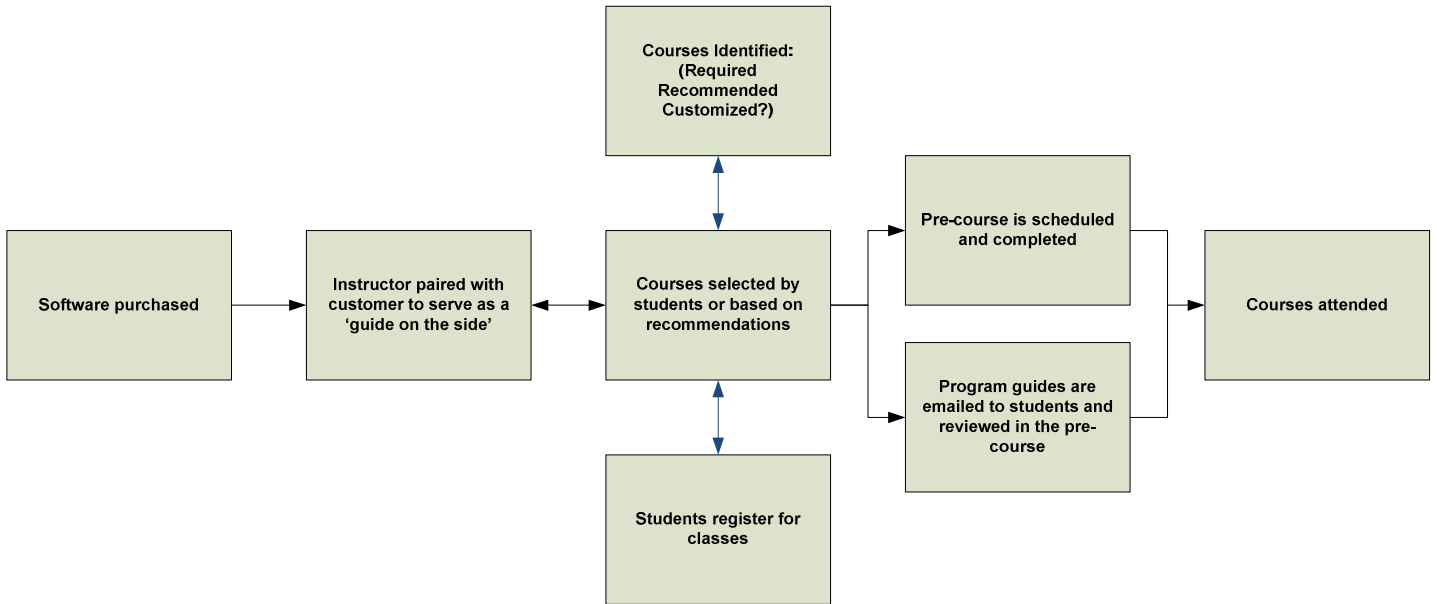


Figure 4 - Pre-Course Creation Feedback Loop

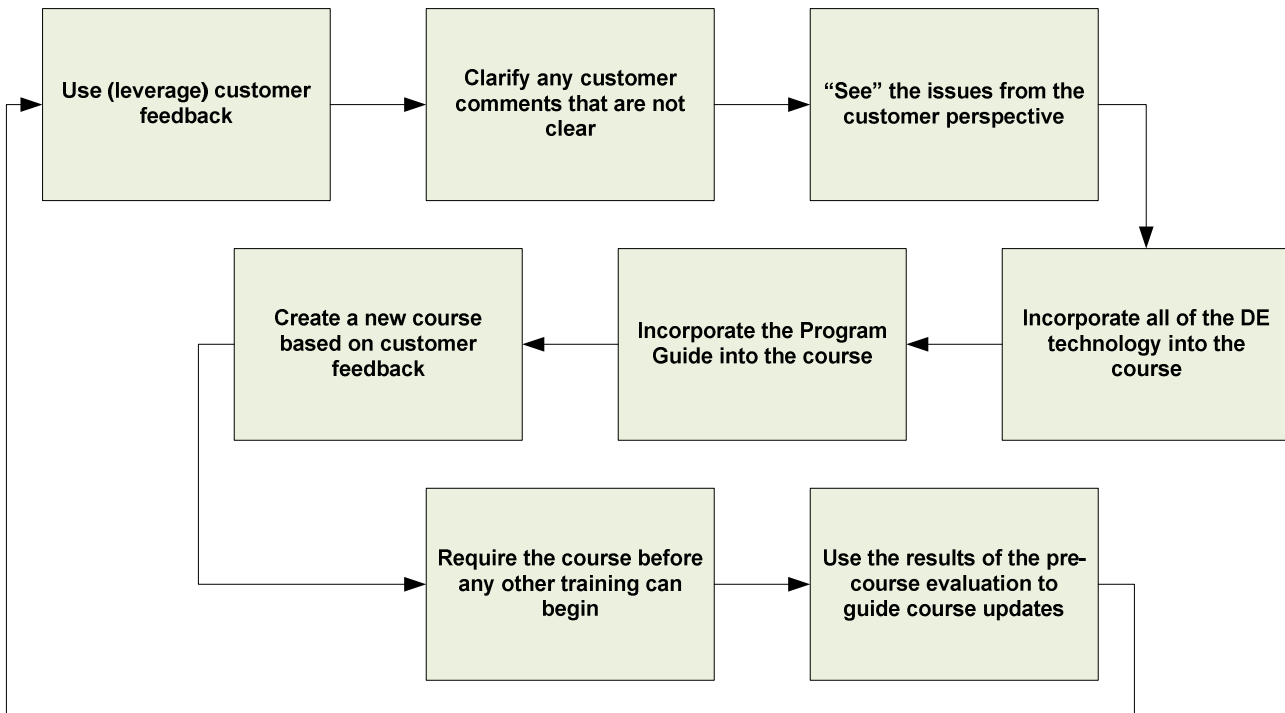


Figure 5 - Online Student Support System Map

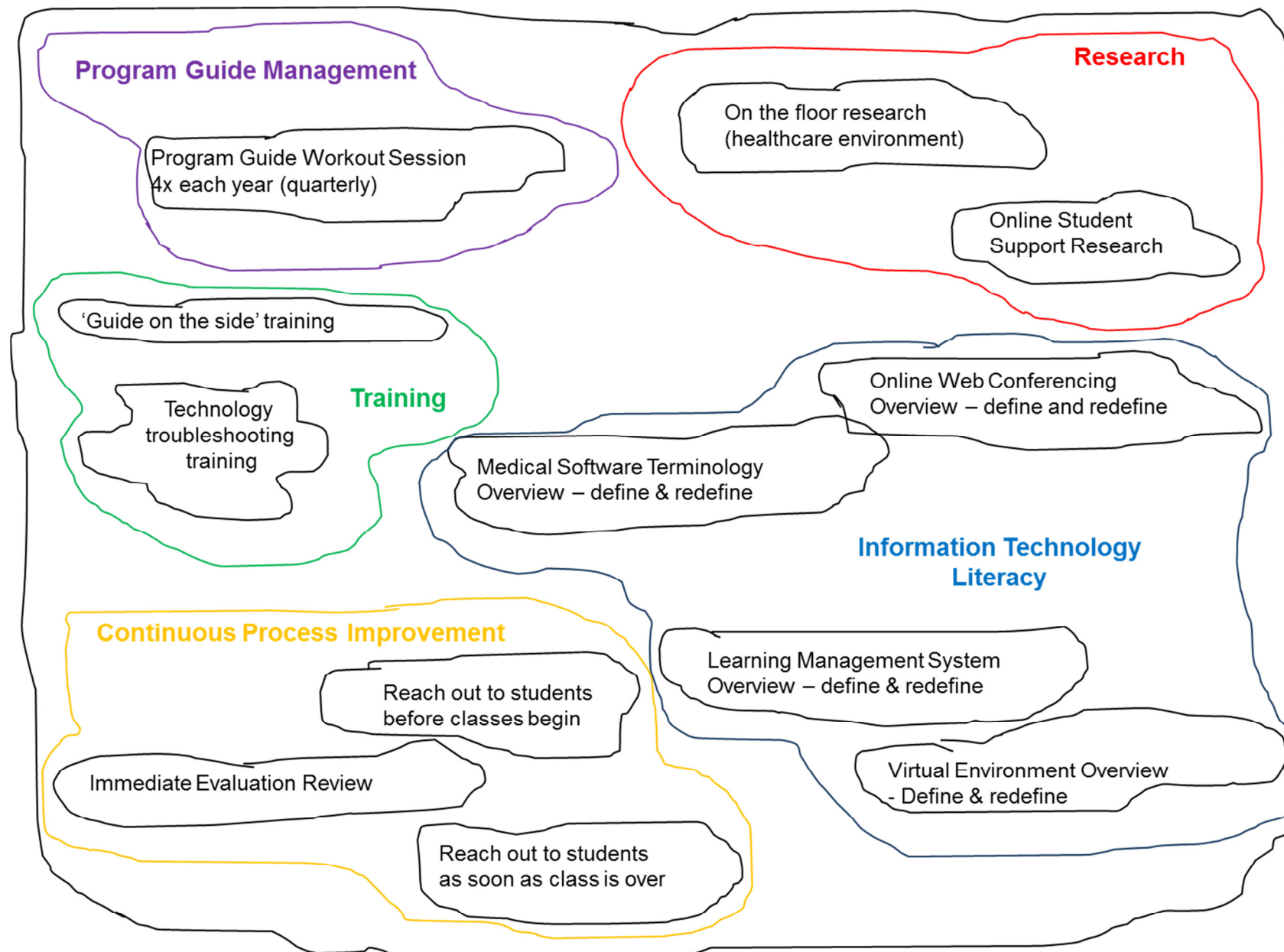


Table 3 –Online Student Support System Map Descriptions

| | |
|--|---|
| Program Guide Management | Instructors assume that the program guides are clear and easy to follow, but students may not agree. |
| Program Guide Workout Sessions | This provides an opportunity for instructors to meet and review the program guides and to identify questions that students are asking that may need further clarification in the program guide. This also provides an opportunity to add information on frequently asked questions. |
| Research | Instead of working within the constraints of each instructor's current knowledge and understanding, research is required to address adult learner support needs in today's fast paced technology driven environments |
| On the floor research | Instructors need to understand the environment that will make use of the software that they support by training. This means spending time in and/or learning more about healthcare environments. |
| Online student support research | How students learn is constantly in flux. With new technology being used to research everything from emotions to memory, instructors should constantly seek the latest information on online student support. |
| Training | Instructor training is just as important as the training that they provide to students. |
| Guide on the side training | Many instructors approach training with a 'sage on the stage' bias. Guide on the side training should be required. |
| Technology troubleshooting training | Understanding common technology problems provides another opportunity for student support. |
| Continuous process improvement | Moving to a culture where change is expected and manuals are not written once, but constantly being re-written to incorporate new learning and knowledge is an important next step. |
| Reach out to students before classes begin | Ask questions and listen to students' responses and requests. |
| Reach out to students as soon as class is over | Ask questions about their experience, what they liked and what they did not like. |
| Immediate Evaluation Review | Review student evaluations and pinpoint areas for improvement and areas that are successful. |
| Information Technology Literacy (Define & Redefine) | Constantly seek to better use the available technology. Be ready to change how that technology is used and taught. |
| Online Web Conferencing Overview | Focus on how the technology can and should be used and why it is beneficial to the student experience. |
| Medical Software Terminology Overview | Focus on how the technology can and should be used and why it is beneficial to the student experience. |
| Learning Management System Overview | Focus on how the technology can and should be used and why it is beneficial to the student experience. |
| Virtual Environment Overview | Focus on how the technology can and should be used and why it is beneficial to the student experience. |

The Learner experience is no longer on the periphery of the teaching landscape. In the Distance Education field, learner support has been and continues to be of primary importance to both students and their instructors. When assumptions are made and the learner experience is not positive, learners quickly become dissatisfied and vocal about their displeasure. This essay did not seek to provide a fix to the problem of learner support, but to provide several ways of moving forward in the spirit of the interpretive systems approach with a focus on Soft Systems Methodology. Taking into consideration the worldviews of the sub system participants and creating multiple “solution paths” provides a beginning for problem solving and options that have a better chance for success.

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