EDP640 ID Project Report

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Title of the Instructional Project: Information Technology Healthcare Solutions

Intent of Instruction:

For this project I have design instruction based around a recent project I finished within the healthcare company I work for! The project was an IT Ticketing System Process Design to better provide feedback, and input on issues reported by employees. This project I partnered up with the Operations team to take a look at the IT Ticketing Systems Process, and response division. The "problem" we were tasked with looking into was how the ticketing system was designed, responses to ticket requests, and how the ticketing was handled by the IT Department. Since the company is ultimately an "umbrella" company, there are several "companies" that fall under one. We were tasked with bringing the various departments together as one, and be able to improve on the Ticketing Systems, feedback and response.

The intent of the project was to design a process that can be plug and play within each division of the company. The internet of the overall project is for the IT Department to be able to provide faster, more efficient feedback to employees who have technical, and mechanical issues with regards to their company equipment. We were looking to design a "cut and paste" process for any division to provide feedback on incoming IT Tickets. With regards to technical issues, it is important to understand that some issues are more difficult to solve than others. For example, a simple password reset or software update would be easier to solve than a component within the computer is not performing as it should, or the operating system had a critical failure which renders the device inoperable. With that in mind we set out to design a more appropriate system for IT to help solve these issues.

The participants for the redesign of the process were a handful of the IT Managers within a few divisions of one side of the company. We took their input based on their current setup, and issues they face on a day to day basis to better help us design the system they will ultimately be using. The intended change we are looking to accomplish is a faster, more efficient IT Ticketing System, and better feedback for the employees, so they can better perform at their respective jobs. Some of the changes we made were on the technical front, where we designed a process to rank the IT Tickets coming in so the tickets could get the respective IT Personal. We worked with the managers to discuss the design of their team, which members of the team may have specialty knowledge in certain areas of IT Solutions. Having this understanding we could separate some of the team into groups, allowing those with more advanced, or specialty knowledge on one or another area of IT to better support the Tickets coming in, and ultimately speeding up response times. Overall we designed not just some technical changes to the previous systems used, but a process with which any IT department can plug and play the process in their department to offer a better IT Ticketing and support system.

Learner Analysis

For this specific instruction the target learners would be the IT Department within the various divisions of the company. Being that each division of the "umbrella" company has their own IT department, it would be introduced to each division's department separately. The characteristics of the learners for this program are those with an IT background, looking to advance and further their

IT Career. Whether they have a Degree from a University or just IT Certifications in the field, this would pertain to all of them; as well as those IT Employees of all ages, being able to better support their fellow employees is something they all strive to achieve. Some of the typical learning style for IT is a hands on approach as much of what this Program offers is done from hands on experience.

This Program is designed to better the effectiveness of the IT department when handling IT Tickets, solving other problems within their area of expertise; as well as., meeting the needs of their superiors. After speaking with some of the Directors, and COO's of the various divisions we learned what they were looking to achieve from a redesign of the IT Ticketing System. Based on some experience I had working a previous position I held, I have worked with other IT Departments and spoken in depth with them regarding their systems. Efficiency, and effectiveness were always two characteristics that stuck out as part of what various IT Departments are looking to achieve.

Task Analysis
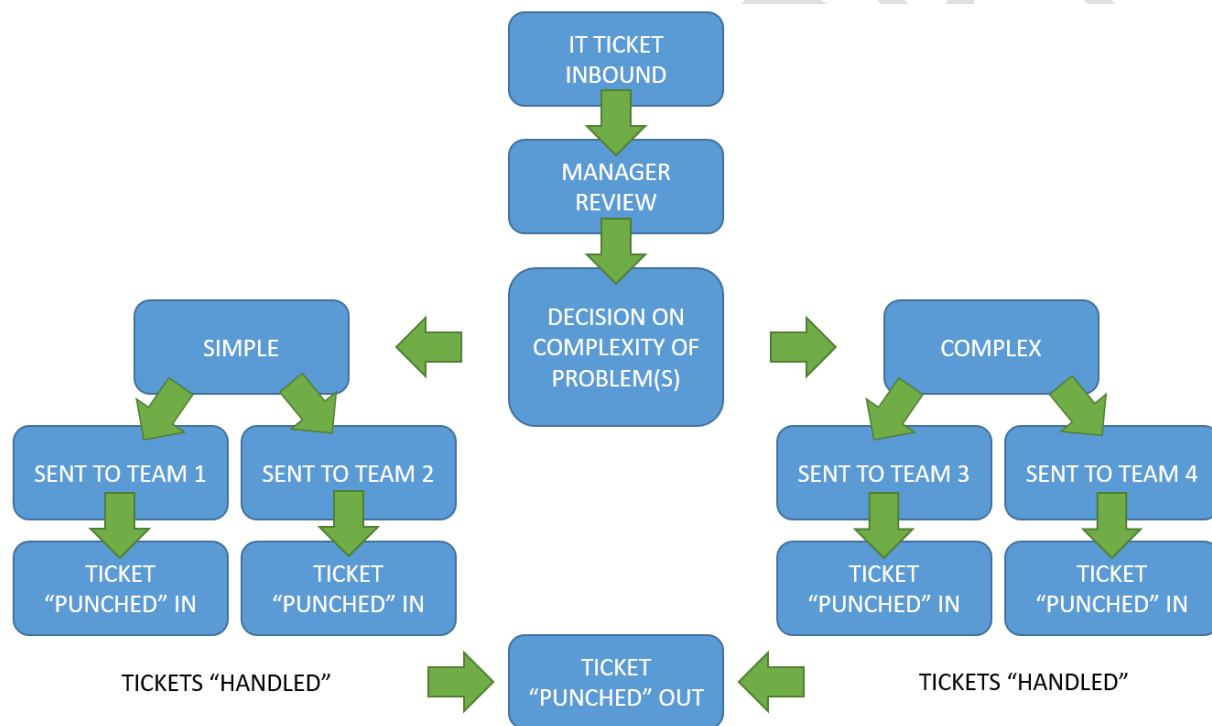
The main task we were looking to achieve with this redesign of this program was to have the IT Department learn a newer more effective and efficient Ticketing System. We were not looking to change the technical system in which each department is using, but rather a "process" that each department can use to better handle tickets as they come in, and be able to provide a better user experience for the employees.

In the above image you will notice that there is an area on each side labeled "Tickets Handled;" this is where much of the Design (Or redesign as it were) went into consideration and planning. Previously the Company had handled them on a per-ticket basis. With each employee in the IT Department getting a ticket as it comes in and they complete the previous. What we wanted to design was a system for distributing those tickets to the employees in a predetermined manner in order to speed up the response time and get the tickets "closed" quicker.

A redesign of this system allows for each employee to play to their strengths. While being able to learn and focus on new areas as the department is able and allows. Having this predetermined manner of distributing requests allows for a smoother transition from ticket to ticket. And there is a more personal connection on the more complex tickets knowing that the IT Employee is connected to their ticket and working on "your" respective ticket and prioritizing the request.

IT Tickets (General Ideas) - Previously Discussed

- Overall Task - Better, More efficient and effective IT Solutions
- Simple Solve Problem (i.e. Password Reset) → Requiring Less Time/Resources
- Quick Reset - "Completed" Virtually - Can Be Learned Quickly
- Complex Problem (i.e. Hardware Failure) → Requiring More Time Resources
- More In-Depth - "Started" Virtually, New Components Sent, "Completed In-Person w/ Install of new Component

Context Analysis

The learning environment for this Program is a Virtual learning experience. As most modern IT Solutions can be done from a remote, Virtual aspect. Being that we are looking to change the "process" rather than the actual technical IT Support System, we are able to do this from a virtual environment.

The tools utilized for this Program is the IT Ticketing Support System (i.e. ServiceNow), and a computer or Laptop capable of running the platform, and a good internet connection. Along with this, we need to make sure the employees have access to all their internal resources, systems, etc. (Which should not be an issue as we did not change anything technical). The only other things we need for this assignment are the employees!

Design & Development

Assessment Methods

For my instruction solution it is using a few combinations of the strategies for sequencing. More specifically it is using two main sequences being - Topical Sequencing and Sequencing on Intellectual Skills. This two fit in line most with the desired outcome, and the most logical solution to make sure the learners are most successful. Topical fits in here because we are specifically targeting the various tasks that will come in for the IT Ticketing System.

Along with this there is Cognitive Sequencing in this instructional process. As we are utilizing the current IT Department and their employees that are already working with the IT Ticketing Systems, which we are looking to overhaul the process in which the employees are utilizing.

Spiral Sequencing strategy does not apply much here since it focuses more so on learning a topic and task pair, and so on and so forth. This is not the best practice for this particular instruction as we are not moving from task to task while learning a topic. Since there is an overall process we are looking to achieve it follows more along the Topical Sequence, and we can better align with the overall organization we are looking to achieve.

Sequence component	Assessment Purpose	Assessment Methods
The IT Department will be able to learn to solve Simple issues such as; Password Resets, Cache Clearing, Application Resets, in a manner 1.5x the current rate of return for IT Ticket Times.	For the IT Department to be able to solve "Simple" IT problems. Each learner will receive a "Mock" IT Ticket Basket Consisting of 5 Tickets containing 5 Simple Issues.	The IT Employees will have to review, assess, and begin to build the most efficient response time. Each of these "Buckets" will be assessed on how the IT Employee builds his/her plan of attack to meet the 1.5x deadline.
The IT Department will be able to learn to solve Complex issues such as; Hardware Failures in a manner 1.5x the current rate of return for IT Ticket Times.	For the IT Department to be able to solve "Complex" IT problems. Each learner will receive a "Mock" IT Ticket Basket Consisting of 5 Tickets containing 5 Simple Issues.	The IT Employees will have to review, assess, and begin to build the most efficient response time. Each of these "Buckets" will be assessed on how the IT Employee builds his/her plan of attack to meet the 1.5x deadline.

Each concept would have their own groups involved. The entire IT Department would be broken into groups of three to five people. The groups would start with the simple tasks first. The small groups would work on their assigned tasks being the "Bucket" they are looking to solve those IT Issues

The groups would look at their assigned "Bucket" and develop their own individual system on how to solve their issues. The small groups would design their system, write it out, and then present to the instructor for this course. The instructor will look over the design proposed by each individual and then would have each member of the small group explain how they came to the conclusion. Feedback would be given based on how each individual plans time of completion (perspective). If it met the 1.5x increase they are looking for that would be a pass. If it is 1.0x or around that in terms of time of completion, feedback would be given on where areas that could have been sped up. Anything under 1.0x would be a fail and a retry would be needed. If the team passed the "Simple" they would move onto the "Complex" and repeat a similar process!

In Depth Analysis of Chart

When looking at this idea from an external perspective, we are NOT changing the IT Tickets, what the IT Employees do, but HOW they go about solving a particular issue. Simple issues are solved rather quickly, those are for example, password resets, these do not take long to solve from a technical standpoint, and we did not change how they do that. For instance, if there is a team of 5 IT Members - We did not have each member of the team receiving tickets from an "equal perspective," but rather we sent ALL password resets (Simple Problem) to one or two members of the team. Another member of the team would work on Hardware Failure (Complex Tickets) as these are typically fewer, but take more energy, time and resources to solve the problem.

Being that the main task was to speed up response times and effectiveness of the response times we wanted to design a process in which a small team of IT Employee (Team of 5), could quickly and effectively solve the issues that came in on a daily basis. For example we will use the above mentioned 1.5 Days as the ideal time to solve the tickets. IN this example the team was at 2.5/2.75 days out. Which the parent company deemed as too far out and employees could not preform their daily tasks if they were 2.5 days behind. Task and objectives below on how the team was to better handle the tickets.

- OBJECTIVE 1 - Manager is to "Round-Robin" (Simple) incoming IT Tickets to teams/individuals assigned to type of IT Ticket solution.
  - o TASK 1 - Team/Individual to analyze incoming ticket and decide best way to "reply."
    - ▪ SUBTASK 1 - (i.e.) Password Reset. In order to complete this task the IT Manager would "remote" in using the proprietary software that allows the Manager to "See" what the employee sees. He would show the employee how to go through the steps to rest his/her password.
- OBJECTIVE 2 - Manager is to "Round-Robin" (Complex) incoming IT Tickets to teams/individuals assigned to type of IT Ticket solution.
  - o SUBTASK 1 - (i.e.) Hardware Failure in Laptop - If computer will not turn on, employee will get a phone call from IT Manager. The IT Manager will "walk" an employee through a few ways to test and see if the machine can be reset. (Take Battery Out/Hidden Factory Reset Button) If this fails move on to ST2.
  - o SUB TASK 2 - Manager will order a new computer which will be sent to the Employee's house or office depending on where the employee is working out of.
  - o SUB TASK 3 - (After New Computer Arrives) - Once the Employee receives the new Lap the employee would call the IT Manager assigned to the IT Ticket. The IT Manager would walk the Employee through the steps to set up his/her new laptop.
  - o SUB TASK 4 - Once setup is finished, the IT Manager will answer any questions about the new Laptop and how the employee can work as they did similar to their old machine.

Instructional Media

Media Material Used	Sequence Component	Learning Goal	Potential/Observed Issue
Real-Time IT Systems Training (i.e. Service Now)	Real time IT Systems training would allow for the Trainees to learn the in house IT Software utilized by the facility to run it Operation. The outcome would be effective use of the software to accomplish the needs within IT.	This would be used as a learning platform for handling IT Tickets. This program (i.e. Service Now) will allow the trainees to learn to handle IT Tickets and make service them in an effective manner	This use is based around how they can apply their knowledge to solving IT Issues.
Jabber/Zoom/Skype/WebEx	One of the following "remote" in or video software's would be learned in order to better assist the Employees within the company when they have an IT Issue.	This system would be used as a platform for helping assist in the process of handling the IT Tickets. It helps the Trainees "remote" in or speaking via audio/video with employees	If using audio/video function it would only be able to be used based on limited knowledge of employees describing their issue.
Presentation (PowerPoint)	Presentations would be designed to help the Trainees go through the process to learn to better effectively handle IT Systems	This would be used as a way to help the Trainees go through likely scenarios and help them build their knowledge base on a variety of IT issues.	This is only a way to view there perspectives, not a real time way to see issues.

Specific Lessons & Activities for Media

Lesson on how to report IT Tickets through Service Now	This lesson will help Trainees learn the basics on how IT Tickets come through the system, and how the Trainees will handle /solve the issues	The trainees' understanding of the Service Platform will depend on how much IT experience they have. Designing answers to questions that arise.
Lesson on "remoting " into a Computer and helping solve an IT issue	This lesson will showcase how the Trainees assist from a remote aspect on issues regarding IT Tickets	Reliable internet connection can halt progress, along with other system failures
Presentation on some types of IT Issues/Solutions	An introduction into how IT Solutions is such a huge part of the company	This is hypothetical and not real time. Which does not give the IT Trainees the best ability to get the knowledge base

Prototyping

For this section I am looking to design an instruction to assist in the speeding up of response time of IT Tickets. Along with this I am looking to provide the best, most effective and efficient IT Support. I am looking to assist the target learners, being the IT Department within the various divisions of the company. The purpose and goal of this specific lesson is to design a few instructional pieces based around common IT Issues in order to measure the speed in which these IT issues are solved. Those learners' characteristics for this program are those with an IT background, looking to advance and further their IT Career. The end goal is for the learners to better be able to support their fellow employees is something they all strive to achieve. Some of the typical learning style for IT is a hands on approach as much of what this Program offers is done from hands on experience.

Objectives are as follows:

Manager is to "Round-Robin" (Simple) incoming IT Tickets to teams/individuals assigned to a type of IT Ticket solution. Team/Individual to analyze incoming tickets and decide the best way to "reply." (i.e.) Password Reset. In order to complete this task the IT Manager would "remote" in using the proprietary software that allows the Manager to "See" what the employee sees. He would show the employee how to go through the steps to reset his/her password.

Manager is to "Round-Robin" (Complex) incoming IT Tickets to teams/individuals assigned to type of IT Ticket solution. (i.e.) Hardware Failure in Laptop - If computer will not turn on, employee will get a phone call from IT Manager. The IT Manager will "walk" an employee through a few ways to

test and see if the machine can be reset. (Take Battery Out/Hidden Factory Reset Button) If this fails move on to the next step. Being that the manager will order a new computer which will be sent to the Employee's house or office depending on where the employee is working out of. Once the Employee receives the new Lap the employee would call the IT Manager assigned to the IT Ticket. The IT Manager would walk the Employee through the steps to set up his/her new laptop. Once setup is finished, the IT Manager will answer any questions about the new Laptop and how the employee can work as they did similar to their old machine.

For the development of this learning session, the basics of solving IT problems are showcased. This would be a two- part lesson, where the first part will showcase via a presentation, and then a session where this knowledge would be used in a "practice where form meets function. Each of the five candidates will take a turn going over the PowerPoint for solving a simple password reset. After which the individual will take a turn at the solution of the issue in a "real" world environment. I chose to start with the "Simple" IT Solutions Problem, as simply, it is the easiest to resolve, and requires, in total, the least amount of user input. Depending on what types of in house system we are dealing with, typically just Windows, or MAC; we are able to swiftly and quickly solve a simple reset without causing too much delay in the end-users work productivity.

 The overall time we are looking for to complete this assessment is less than 10 minutes! Once the review of the Presentation is completed it should not take more than two to three minutes to connect up with the "Employee" and solve their Password Reset issues.

Description of Components to Instruction:

 A few tasks that are is part of the component

- Reasons for choosing this particular task(s) for testing
    - Simplicity & Ease of Learning w/ greatest possibility of success
    - Not much testing needed in order to be able to complete task
    - Once review of Presentation, solution is almost immediate
- Time/duration that is need to complete the task
    - Successful Completion is ~10 Minutes
- List of steps (e.g., subtasks) that the learner is expected to take in order to complete the task
    - Analyze Password Issue
    - "Connect" w/ Employee
    - Understand Issue from "Remote" Aspect
- Your verbal instructions for the learner to start and complete the task
    - Be able to showcase Presentation
- Materials needed for the learner to complete the task(s)
- Laptop / Internet Connection / Access to In-House IT Software
- Presentation tools: PowerPoint (or Alternative)

Once I had a design piece for what I was looking to achieve I set out to gather a few participants. Participants partook in a short learning lesson on how to solve a simple password reset. For this test three participants took part in reviewing a 10 slide PowerPoint presentation going over the solution of the IT issue. Once the review of the presentation is completed, the three participants took a turn on a laptop and tried to "solve" a password reset. Each participant was challenged to complete the task in a set period of time (5 minutes).

 Each person was "graded" based on their speed and effectiveness of solving the password reset. A review was done while each participant was observed as they were performing said reset, and a review of the time and effectiveness were recorded once the task was completed. as done afterwards.

The participant I chose were a few individuals that have worked in various sectors of IT. Two have advanced level experience (15+ Years) and three had moderate experience (5+ Years). I wanted to have a few people in vast variations to see how experience plays into the success of the solution.

Findings from this Prototyping Lesson are Listed Below:

Testing was done in a closed environment at the HQ. This is where I met with the five employees who helped perform the examination of the instruction for the assignment.

Review of the material took about 5 to 10 minutes for each of the participants. This allowed each one to individually review the materials. I did it separately so that the employees would not converse about the strategy for most effective completion of the assignment.

My role was to assist in the "Presentation" and help the learner go through each slide and have the learner be able to complete the task. The roles of the employees were to learn the material, review it, and complete the assigned task.

The results for the assignment were that each of the employees was able to review the Presentation and complete the assignment being - Solve a simple Password Reset. Each employee took about five minutes to review the presentation and then a subsequent two to three minutes to "connect" up with an employee in need of a password reset, and solve their issue.

Each of the employees took their own strategy to complete the password reset, but they all appeared to fall in the same "style." By that I mean since all of the participants had a background in IT, it was not supposed they were thinking of how to solve it in a similar manner. I would expect someone with an outside perspective, or less experience to perhaps not have a more efficient strategy.

Changes I would make with this lesson would be a few details reading the Presentation. A few details that could provide a more specific instruction based on the specific Company that the employees worked for. Although this would not have caused as much confusion outside the Company, with those IT employees' familiarity with specific software, generalizing the software's created some confusion.

Revisions made based on the feedback and areas included the design of the lesson and presentation. The presentation portion of this lesson is a tricky area. We want to design a lesson/assignment to showcase some examples, but until the individual gets into the "hot-seat" and starts working on IT Tickets, it is difficult for them to showcase effective learning on the lesson.

Aside from the Presentation we looked to include a bit of a real time feedback system where employees could be rating the service they have been getting in regards to the IT Problems. Along with this each ticket was given a "counter;" where each ticket would be "punched" whe it began to be resolved and again when it was completed. Allowing for the IT Employees to see in real time how their progress was going.

Summative Evaluation

Criteria	How did/will you evaluate?	-What did you find (if already evaluated)? -What do you think you will find (if not evaluated yet)?
Effectiveness	Based on Peer Review of the explanation of the assignment. Employee Feedback based on the "test" that was done in the "prototyping" phase. Expectational Evaluations Include: Effectiveness of Employees on Shortening the Time Frame How Esay of a 'Cookie-Cutter" system did we actually make? Can it be easily input into other sectors of the business?	Peer feedback suggested this would be an effective tool at providing the employees with a more streamlined approach to the solution of IT Tickets. Employee feed has rendered solid evidence that the Instruction if implemented within the company correctly would increase workflow and decrease downtime of employees having trouble. Expectational Findings Include: Expectations seem to suggest that the decrease in downtime for employees would boost morale as they know that their IT Tickets are taken care of in a quick manner of time. In terms of how this will be implemented into the business it will most likely need to be slightly tailored to each sector, thus requiring a few "updates" in order to ensure effective deployment.
Appeal	Based on Peer Review of the explanation of the assignment. Employee feedback on the Presentation of the information being learned? And how will it be used? Expectational Evaluations Include: The idea of Quality vs Quantity? (Will employees feel the need to speed through tickets to meet the timelines? Will they still provide the best customer support knowing he/she has a timeline?)	Peer feedback states the information has an appeal in the scenarios of increasing efficiency in the workplace. Questions on the effect of "teaching" will arise as most of this is hypothetical and not real world. Employee Feedback states there is a solid appeal for wanting to approve workflow. This makes the employees want to get better, faster and stronger. Expectational Findings Include: I expect at first employees to be concerned about the number of IT Tickets needed to be completed in order to decrease the amount of time, and amount of tickets. I do think once the employees get more comfortable with their respective tickets the timeframe will not be an issue.
Efficiency	Based on Peer Review of the explanation of the assignment. Reviewed the Prototyping portion of the Instruction to see how the Employees performed in that stage of the Instruction Expectational Evaluations Include:	Based on the peer feedback it does seem to suggest that the Instruction would be efficient in achieving the goal of shortening the timeframe of solution by about 1.5X. The effectiveness of the Instruction of how the "Learners" intake the information was questioned because a s previously referenced much of the "learning" was hypothetical, and not real world. Real world testing in the Prototyping Phase suggested that

	Will the Timeline for conclusion of IT Tickets decrease by 1.5x? More? Less? To what effect will this program have on the effectiveness of the Employees? Who Really Benefits?	the efficiency of the learning was good, and the employees were able to learn and execute effectively. Expectational Findings Include: We expect to see a 1.5X decrease in the amount of time it takes for the IT Tickets to be handled. I would not expect to see anything much more that 1.7X; however I can conceive that in the beginning the effectiveness may only marginally increase, thus seeming to not be effective, but as time goes on and the process get more "ingrained" into the staff, I expert to see the full 1.5X boost in efficiency. Overall I would expect a benefit of everyone involved in the company.

Toward Implementation

Currently with this project we have already begun to implement it within one to two sectors. Working with the IT Managers within these two sectors, they have begun to train the employees on the new process of solving the IT Tickets. The process portion of the Instruction itself has already been completed; Implementation has begun, and two teams are slowly transitioning into utilizing this new approach.

One part that is still under review, and still having design tweaks is a "learning" phase. As I Mentioned in a few parts of the instruction I have designed above, there can be a portion designed to "teach" people how to solve IT Issues. At this point the learning portion has not needed to be implemented as the current employees have IT Backgrounds. The process in which IT Tickets were dealt with was the bulk of what we were looking to increase efficiency.

As we have already started to implement portions of the above mentioned Instruction, our deadline has surpassed. The overall project lasted about six months, and the implementation process has now been going on for just over two months. Overall thus far the feedback we have received has been good. The process for the reading of the IT Ticketing Process has gone well, no real flops, or issues thus far.

In terms of completing the portions; such as the learning section, are feasible in a sense completion of the Instruction. At this point the IT Managers have not needed to train new IT Employees on their internal systems. I was told that there is a new hire on the way in the coming year, so we are looking to have it finalized by year's end in order to showcase it to the new hire.