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LAPT 602

Final Training Design Plan

Rationale for Training

Barclay's Bank, TransAlta, JP Morgan, Canopy Growth, and the 2012 London Olympics are distinctive and separate organizations with one common denominator. All five created Microsoft Excel spreadsheets containing accidental errors causing major costly consequences. According to Harris:

1. **Barclay's Bank** - Hiding cells instead of deleting cells cost Barclay's Bank millions during the 2008 meltdown
2. **TransAlta** - A cut-and-paste error cost TransAlta $24 million
3. **JP Morgan** - A cut-and-paste error cost JP Morgan $6 billion when a Value at Risk model was miscalculated. (Harris, 2017)

Canopy Growth reported EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization) loss of $69 million; in reality, the reputed EBITDA loss was $117.5 million (Ward, 2019). The 2012 London Olympics did not escape this list when a typo in Excel resulted in "four synchronised swimming sessions being oversold by 10,000 tickets" (Kelso, 2012). The list goes on; Fannie Mae made a $1.1 billion Excel error; Fidelity made a 2.6-billion-dollar Excel error and Utah's Office of Education made a 25-million-dollar budget Excel error (Coughran, 2016). Again, the errors never end.

Microsoft Excel is the preferred choice when it comes to spreadsheet applications. Google the most popular spreadsheet application in the world, and Microsoft Excel comes up without hesitancy. Approximately 750 million people are using Excel globally (Kobie, 2020); however, with this amount of usage and with "millions of Excel spreadsheets [being] used in medicine, science, economics, and finance, . . . up to 90 percent of these spreadsheets have serious -- even life threatening – errors" (Harris, 2017). To help prevent catastrophic Excel errors, businesses hire outside resources to review their spreadsheets and search for incorrect data that could cause disastrous results. According to Kobie, these resources mitigate the risks by fixing everyone else's mistakes.

So why are there so many errors? Many users are self-taught. Kobie confirms that errors are typically due to mistakes made by the user, not the software, and many companies "don't think it'll happen to them." Organizations use Excel to manage, manipulate, and analyze huge budgets and create spreadsheets containing data reflecting large sums of money. So why wouldn't an organization provide Microsoft Excel training to its employees, whether it is to learn basic, intermediate, or advanced Excel concepts to reduce errors?

The Child Support Administration (CSA) recognizes how important Excel training is. Therefore, Excel training has been requested, focusing on restricting and controlling data in worksheets. CSA is an organization that provides locate, establishment, and enforcement services to custodial parents. This organization works with "both parents [custodial and non-custodial] to provide the financial, medical, and emotional support their children need to grow and thrive" (Child Support Administration, n.d.). CSA routinely utilizes Microsoft Excel to review and analyze payments received from non-custodial parents. This organization understands that one incorrect change to an Excel spreadsheet could cause incorrect data to be displayed, generating complications in a worksheet that would result in negative audits. Therefore, CSA requests staff be trained in Excel concepts relating to data validation, permissions, and protection. In the past, supervisors with Excel experience have created worksheets containing validated and protected cells to control data entry. Staff working with these spreadsheets are left puzzled because of limited knowledge regarding these tools, causing frustration among users.

The course offered to CSA addresses the Excel screen, steps to protect worksheets, and procedures to restrict data in cells. Users will not only be able to use these tools but also recognize when these tools are applied in worksheets; thereby reducing the frustration currently encountered. Although data validation and protection in Excel worksheets is the training focus, to ensure staff are up to speed and can easily comprehend and perform these tasks within Excel, CSA is also open to providing prerequisites to staff to ensure they master Excel basics before participating in the main requested course.

Target Population

The target population for this course includes child support directors and supervisors, child support specialists, social workers, and attorneys. All participants work for the Child Support Administration for the state of Maryland. All participants have a minimum of an eighth-grade reading level and are fluent in English. Based on the job description and confirmed by CSA, most participants will have at a minimum the following qualifications:

> Associate of Arts degree in Social Services, Human Services, Legal Studies, Public Administration or similar fields of study from an accredited college or university. Those without a degree have experience investigating and analyzing child support cases and initiating appropriate actions to establish, maintain, or enforce support payments for dependent children in accordance with Federal and State laws, rules and regulations may be substituted for the required education on a year-for-year basis (State of Maryland, 2019).

As noted, with child support social workers and attorneys participating in this course, many staff have a bachelor's degree or higher education. Some participants are newly hired, while others have been in their positions for two years or longer. Staff work in various child support departments and have different roles as defined below:

Departments:

Intake – accept, review, and open child support applications
Establishment – determine paternity and establish child support orders either administratively or judicially
Enforcement – perform legal processes to ensure child support is paid
Intergovernmental – perform establishment and enforcement procedures across state lines and other countries
Fiscal – handle child support payments

Roles

Directors - oversee child support programs throughout the State of Maryland, managing, administering, and coordinating Statewide and Intergovernmental activities and programs related to federal and state child support enforcement laws (State of Maryland, 2016)
Child Support Supervisors - supervise and manage child support specialists

Child Support Specialists - investigate and analyze child support cases and initiate appropriate actions to establish, maintain, and enforce support payments (State of Maryland, 2019)
Social Workers - promote family stability, safety, and child permanency (Maryland Department of Human Services, n.d.)
Attorneys – represent Maryland's Child Support Administration

Regardless of the department or position, the Excel training content is the same for all participants. Approximately 15 percent of the participants are men, the others are women. The age range for participants is between 20 and 65. All staff reside in Maryland and are Maryland state employees familiar with Maryland state child support policies.

Currently, a few staff workers in local child support offices throughout the state; others work remotely. All have access to a computer. Some participants are familiar with creating and developing Excel worksheets (all self-taught); others may open, review, and manipulate content within Excel worksheets. There are no challenges for individuals participating in this course except for the prerequisite. All staff offered this training are computer literate, familiar with Microsoft Excel, and have access to the application. The consensus is that most staff members prefer to participate in the Basic Excel prerequisite as a review since many staff members have not been formally trained. Supervisors are accepting of this proposal. Participants also welcome the training focusing on data validation and permissions and support attending this course to achieve proficiency working with these Excel tools, as a tremendous amount of time has been spent maneuvering through Excel worksheets trying to overwrite content without fully understanding data validation and permissions.

Course Description

If you are nervous about entering incorrect data in Excel, or you do not understand why content is at times inaccessible in Excel, or you are restricted to inserting limited values in Excel spreadsheets and you are baffled as to why, this course is for you! If you want to develop Excel spreadsheets and learn how to restrict the content being entered and control what users can access, this course is for you! This course covering Excel data validations and permissions is self-paced, consisting of online lectures and labs. The course is designed specifically for CSA staff using data and examples provided by CSA. The goal of this training is to:

- Familiarize users with features in Excel to reduce data entry errors and keep users from accidentally deleting content.
- Provide participants with knowledge so they can use Excel tools to protect their data.
- Provide participants with knowledge to recognize when worksheets contain various Excel tools that limit user manipulation.

The course will take 2-4 hours to complete. Participants must have access to a computer or laptop with internet access. Excel 2016 or a more recent Excel version is required. Users must be at a basic/intermediate level to participate in this course. This requires a user to be proficient at creating, saving, and opening worksheets, creating basic formulas and functions, and applying formatting to cells

without difficulty. Users must be able to efficiently move around an Excel worksheet and be familiar with the various screen features that include the following: Excel tabs, the ribbon, the taskbar, rows, columns, and cells. Manuals and lab materials will be provided online and can be printed if desired. Lab materials allow for a hands-on approach providing participants with practice before working with live data. All participants will have access to an online folder containing their materials where they may also save their work. The client (CSA) will determine a completion date for this course. After completion, participants will receive an electronic certificate that can be saved and downloaded.

The following training content is covered in this course:

Lesson 1

Using the Data Validation feature

1. Description of Data Validation and why it is used
2. Applying data criteria based on settings
    a. Values
    b. Lists
    c. Dates

Lesson 2

Using Data Validation Options

1. Creating and displaying input messages for validated cells
2. Creating and displaying the following error messages for incorrect entries
    a. Stop messages
    b. Warning messages
    c. Informational messages
3. Using the Data Validation Circle feature
    a. Activating the Circle feature
    b. Deactivating the Circle feature

Lesson 3

Protecting Cells and Applying Permissions

1. Setting Permissions
    a. Setting cell permissions
    b. Setting worksheet permissions

Each numbered topic and sub-level includes online lectures, demonstrations, and labs about the content listed. To evaluate the mastery of a participant, the participant must complete all course content and lab work, receiving a passing grade of 80% or higher. Participants failing to achieve a passing grade will be required to review course content and repeat the assignments until a passing grade is achieved. Supervisors will receive an email confirmation immediately after the participant receives a passing grade.

Although the details are not in this proposal, it is recommended that the Basic Excel prerequisite course be available online and in person with a live facilitator. Participants can choose their preferred training method. The in-person training allows the facilitator to evaluate an individual's level and if they are ready for the next course. The online training will consist of labs as well to determine user mastery.

Terminal Objective

Given access to a working PC or laptop, access to Microsoft Excel, access to the internet, online course modules, and labs, the CSA adult learner should be able to create a new Excel worksheet or open an existing Excel worksheet and create and/or recognize validation rules, applying both input messages, error alerts, and worksheet/workbook protections without error while also being able to remove these applied options without error.

Enabling Objectives

Lesson One

- Given access to a file in Microsoft Excel, the CSA adult learner should be able to:
    - Locate the command used to create validation rules.
    - Explain Excel's data validation feature.
    - Explain at least three validation rules that can be applied to cells.
    - Create, once without error within three attempts, a validation rule restricting users to entering whole numbers only.
    - Create, once without error within three attempts, a validation rule restricting users to entries within a list.

Lesson Two

- The CSA adult learner should be able to explain:
    - Why an input message is helpful to users.
    - The three types of error alerts that can be applied to cells containing validation rules.
    - The use of the validation circle feature.
- Given access to an Excel worksheet, the CSA adult learner should be able to apply, once without error within three attempts:
    - An input message to cells containing a validation rule.
    - An error alert to cells containing validation rules.
- Given access to an Excel worksheet where a validation rule was applied to cells containing existing data, the CSA adult learner should be able to apply validation circles to these cells without error within three attempts.
- Given access to an Excel worksheet displaying validation circles, the CSA adult learner should be able to demonstrate how to clear the validation circles.
- Given access to an Excel worksheet containing validation rules, the CSA learner should be able to demonstrate how to clear validation rules.

Lesson Three

- Given access to an Excel worksheet, the CSA adult learner should be able to:
    - Locate the commands used to protect a worksheet and a workbook.
    - Explain the difference between protecting an Excel worksheet versus protecting an Excel workbook.

    - Apply basic protection to cells without error within three attempts.
    - Demonstrate how to protect an Excel workbook without error within three attempts.
- Given access to an Excel worksheet containing protected cells, the CSA adult learner should be able to demonstrate how to unprotect cells within an Excel worksheet without error within three attempts.
- Given access to a protected workbook in Excel, the CSA adult learner should be able to demonstrate how to unprotect an Excel workbook without error within three attempts.

Evaluation Strategy

Throughout the course, using a Level 2 evaluation to measure the knowledge acquired, the participant will be able to reinforce skills learned by completing hands-on activities and labs that will be evaluated and graded. These activities will require responses to knowledge check questions in the form of short answers, multiple choice, fill-in-the-blank, and true or false questions. Recorded screen simulations will also be utilized so participants can locate and click the required function(s) in Excel to complete the graded simulated tasks. The participant will be given a maximum of three chances to correctly answer all questions and perform simulations correctly. All hands-on activities will match the objectives listed for this course.

After completing and passing the course, the participant will participate in a Level 1 evaluation involving a survey/online smile sheet that will be filled out allowing the participant to convey their reaction to the course content. The participant can provide feedback based on the following main categories:

- Course content
- Course labs and assignments
- Training environment
- The facilitator

Each category will contain closed-ended questions using the scale below:

1 = Never 2 = Seldom 3 = Usually 4 = Frequently 5 = Always

Additionally, there will be an area for open-ended comments. After completing the survey/online smile sheet, the participant will be asked to submit the survey. All submissions will be delivered to the participant's supervisor and the facilitator for review. After receiving a passing grade for the course, an online certificate is automatically emailed to the participant.

After completing and passing the course, the client has proposed that participants be tasked with reviewing and editing Excel spreadsheets containing CSA data. Using a Level 3 evaluation strategy to assess behavior, participants will apply the knowledge learned from their coursework as they review the Excel features discussed. The CSA spreadsheets will require participants to apply validation rules to cells and edit spreadsheets where validation rules were previously applied incorrectly, since many spreadsheets contain data where validation rules were applied after the data was entered. Participants will have to adjust these spreadsheets using the validation circle feature. Participants will also lock specific cells and apply permissions, sharing these permissions with supervisors and approved staff.

Supervisors will be able to review the spreadsheets to determine if the training content presented is apparent in the edited and saved spreadsheets. After reviewing these spreadsheets, a supervisor can determine if a participant was able to proficiently apply the learned skills. If the supervisor determines the features were not applied correctly, the participant will be required to go through the allocated training again to review. Afterward, they will be able to go through this process with another spreadsheet. Until the supervisor is satisfied with the results, this could be ongoing training until the participant can correctly apply validation rules and permissions to assigned spreadsheets. If it is determined that a common issue is presented where many participants are having a difficult time applying the Excel features addressed in training, a discussion with the participants will be necessary to figure out the common denominator. It is then possible that the training content will have to be enhanced to resolve the deficiency.

Participant Prerequisites

To participate in this course, participants must be able to read, speak, and write English and have a minimum of an eighth-grade reading level with good communication skills. Time management skills are necessary, with participants being able to set aside four hours to complete the course within the timeframe provided by the participant's supervisor. Reliable internet access and sufficient internet speed are essential for participating in this course. Participants must be comfortable using an internet browser; specifically, Google Chrome and/or Internet Explorer. Access to a computer or laptop with a mouse and/or mouse alternative and a keyboard is required. Participants must be comfortable using this hardware to perform basic computer functions without difficulty. The laptop or computer must have built-in speakers to listen to any audio being presented throughout the course. For a clearer and enhanced sound quality, participants may opt to use headphones throughout the training. Headphones are also beneficial in that they provide the participant with more privacy and fewer distractions for the participant and those who may be in the vicinity. Participants should ensure that their learning environment is free of distractions to focus on the training course so the course can be completed without unnecessary delays.

Microsoft Excel must be installed on all participants' computers or laptops. Familiarity with Excel is necessary. Participants should be proficient in performing the following functions in Excel without assistance:

- Creating a new worksheet
- Opening a worksheet
- Saving a worksheet
- Locating Excel columns, rows, cells, the Excel ribbon, tabs, worksheets
- Creating basic formulas
- Creating basic functions using the sum icon (sum, average, max, min, count)
- Applying basic formatting using the Font, Alignment, and Number categories

If a participant cannot perform these skills or request an Excel review before participating in this course, the participant will be required to participate in a prerequisite course, Basic Excel, covering the topics listed above. Throughout this prerequisite, the participant must demonstrate their proficiency with these topics by passing all labs presented. This will be determined and monitored by the facilitator, as the facilitator will assess the participant's work throughout the course.

Participants must be a Child Support Administration employee, approved to participate in training, and must serve in one of the following roles:

- Director
- Child Support Supervisor
- Child Support Specialist
- Social Worker
- Attorney
- Any other CSA role approved by the client

The training is catered to the Child Support Administration; therefore, as a CSA employee, participants must understand the following terms and acronyms that may be referenced throughout the training course:

- CSA – Child Support Administration
- CP – Custodial Parent
- CU – Custodian
- NCP – Non-Custodial Parent
- TCA –Temporary Cash Assistance
- SDU – State Disbursement Unit
- IV-D Services (pronounced 4-D Services)

If participants intend to take notes throughout training, a notebook, pen, pencil, and/or highlighters may be useful, or the participant may use an application such as Microsoft Word or a similar application to type and store their notes. For participants who prefer to print out some of the online content, such as their hands-on activities, access to a printer is necessary. The participant must have a valid CSA email address to receive training content, training date reminders, grades, comments from their supervisors, and to communicate with the facilitator if necessary. This email will also be used when issuing a certificate after completing and passing the course.

Facilitator Prerequisites

To facilitate this course, the facilitator must be able to read, speak, and write English and have a minimum of an eighth-grade reading level. A bachelor's degree in education, communications, or information systems is preferred. A minimum of two years of training experience is required with experience teaching Microsoft Excel and other Microsoft software applications. The facilitator must be an Excel expert (having a Microsoft Office Excel Expert Certification is a plus). Being able to interact and communicate effectively in public or in front of a camera or a webcam, while possibly being recorded or interacting with participants, is essential.

Reliable internet access and sufficient internet speed are needed for facilitating this course. The facilitator must be comfortable using an internet browser, specifically, Google Chrome and/or Internet Explorer. Access to a computer or laptop with a mouse and/or mouse alternative and a keyboard is necessary. A built-in laptop camera or an external webcam that can be connected to a laptop or computer is necessary if the facilitator plans to be on the screen at any given time. The facilitator must be comfortable using the required hardware, and performing intermediate to advanced computer

functions without difficulty. If using a camera, there must be good lighting in a professional atmosphere without background distractions. The facilitator should dress appropriately for the camera, wearing professional but comfortable attire. The laptop or computer must have built-in speakers, and for a clearer and enhanced sound quality, the facilitator should perform any voiceovers and narrations using an enhanced microphone with enhanced headphones to deliver and listen to audio. The training environment should be free of distractions to avoid background sounds.

Microsoft Excel must be installed on the facilitator's computer or laptop. As mentioned, the facilitator must be at an expert level, and familiar with basic, intermediate, and advanced techniques in Excel. Based on this training, the facilitator must understand how validation rules and permissions are created and applied to Excel worksheets, and be able to confidently communicate how these functions work. The facilitator must be able to relate the Excel training to the participants' experiences, and have an understanding of some of the basic CSA concepts and why this training is necessary. Since the training is catered to the Child Support Administration, the facilitator must also have a basic understanding of the functions performed by CSA, and understand the following terms and acronyms the facilitator may reference throughout the training course for the training to be relatable to participants:

- CSA – Child Support Administration
- CP – Custodial Parent
- CU – Custodian
- NCP – Non-Custodial Parent
- TCA –Temporary Cash Assistance
- SDU – State Disbursement Unit
- IV-D Services (pronounced 4-D Services)

The facilitator must also be familiar with eLearning authoring tools such as Captivate, Articulate Storyline, and/or iSpring since an eLearning authoring tool will be used in developing some of the course content and labs. Exceptional presentation skills with a thorough knowledge of Microsoft PowerPoint are also required. The facilitator must have access to a learning management system (LMS) so content can be uploaded and accessed by participants and supervisors.

The facilitator will review with the instructional designer the training course to be implemented. After the training is created, based on the instructional designer's design plan, the facilitator, the instructional designer, and the client will review the course for approval before the course is launched for participants. The facilitator must have a valid email address to communicate with all stakeholders, including course participants.

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