An Empirical Study: Using Off-the-Shelf Authoring Software to Create an Online Decision-Making Job Aid

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Abstract—The Professional Development Program of Rockefeller College, University at Albany, is a non-profit organization contracted to various agencies of New York State government to develop training on specific job tasks for staff of county offices. One such training had initially been implemented as a traditional classroom-based course, but, based on an assessment of the target population, was reformatted into an online decision-making job aid. This resulted in a resource that not only addressed the training topic but provided a more efficient means to carry out job tasks. Using this example, this presentation outlines the process used to turn a typical classroom-based training into an online performance support resource.

I. INTRODUCTION
Throughout the training industry and within many organizations, online training is becoming a popular and relatively cost effective training method. However, with this shift from classroom based training to online delivery, traditional instructional designers face a dilemma—how to develop online training without learning all of the ins-and-outs of programming and graphic design. To address this issue, at the Professional Development Program (PDP) instructional technology (IT) staff originally created a content management tool that allowed traditional instructional designers to organize content using preformatted templates. IT staff would then assemble these templates into an online course. However, requiring IT involvement to set up each new course created a roadblock and delayed product completion when numerous course development projects required assistance at the same time.

Today however, with advancements in commercial off-the-shelf authoring software, traditional instructional design staff at PDP are able to create online training without requiring assistance from IT staff. This ability resulted in not only faster development time but, more importantly, provided traditional instructional designers more options when choosing the most appropriate training method.

II. AUTHORING SOFTWARE SELECTION
Our first step as an organization was to research and adopt authoring software that could accommodate instructional designers. When selecting the best authoring software for our needs, instructional designers indicated that they wanted a robust tool that would allow autonomy in course creation and customization. We originally considered enhancements to our existing tool that could allow non-technical staff to create courses “on the fly” without assistance from a programmer. However, after assessing the time and programming resources necessary to do this, we determined that this option was not optimal.

We turned instead to testing readily available commercial products, such as Lectora®, Adobe Presenter®, Articulate®, and Captivate®. Organizationally, we wanted to accommodate the need for instructional design staff to have an easy-to-use tool, while also taking into consideration that staff would also be developing different types of training depending on their content area. Additionally, we had to take into account that resources within our organization to acquire and support a development tool were limited. While cost was certainly a consideration, there were some features that were non-negotiable: the software had to be easy to use, be able to publish content that would meet federal accessibility standards, and enable SCORM compliance, which allows the programming code used in the design of the course to transfer to another program if required.

Other factors included the ability to:

- Customize templates to include sponsor logos and other features dictated by contracts.
- Use screen captures and software simulations needed for systems training.
- Easily produce and embed video within courses.
- Create a wide variety of interactions.
- Produce highly interactive e-learning, not online PowerPoint page-turners.

While each product had both benefits and drawbacks, Lectora, a product already stipulated by one of our agency contracts, was ultimately the product we chose. Once Lectora was implemented, we began using it to build standard asynchronous online courses. However, another use quickly became evident during the rollout of our onsite classroom-based course Boost Your IQ (Interstate Quotient)®, which addressed the procedures county staff must follow, as stipulated by law, for interstate court cases.
III. THE GENESIS OF INTERSTATE TRAINING

We first developed an onsite classroom version of this course in 1996 to address nationwide changes in the laws that affect court actions across state lines. At that time, the accessibility of the internet and web-based training was limited, while production costs, delivery logistics, and software learning curves for users of CD-ROMs were prohibitive. This left traditional classroom training as both more efficient and cost effective.

Fast-forward sixteen years, and with a turnover in workforce since the initial course was delivered, a resurgent need for this training was identified. In the initial stages of this development, we assumed that the same approach—onsite classroom based training—would be appropriate. However, after just a few onsite deliveries, certain factors made it evident that classroom training was no longer the best method. These factors included:

1. The volume of training requests for this content would mean substantial cumulative travel costs for both trainers and participants.
2. More varied workforce brought growing preference for a less structured and more on-demand training approach that provides just the information they need precisely at the moment it is needed. This approach is also supported by Malcolm Knowles and his theory on adult learning principles as presented in *The Adult Learner, The Definitive Classic in Adult Education and Human Resource Development*.
3. Perhaps most crucially, the training content focused in large part on how to use hardcopy flowcharts, which could be readily adapted to an online job aid using technology now-available.

Elaborating on this last point, participant feedback from the initial deliveries indicated that while the paper flowcharts were very helpful, a significant percentage would appreciate something “simpler” to use. Fortunately, advancement of products designed for creating more dynamic training are becoming more widespread, affordable, and user-friendly for those without any programming background, as demonstrated by our adoption of Lectora. Given these new advancements, we now had the capacity to develop this course into an asynchronous online resource without the assistance of programmers.

IV. MERGING CONTENT AND SOFTWARE

While the content already developed was comprehensive and easily transferrable to the structure of the decision making job aid, in order to transfer it to Lectora, or any authoring tool, we first had to create a more precise flowchart of how each piece of content would hyperlink to the next, creating a blueprint that illustrated all potential decision making paths. Rather than attempting to build this job aid from the original course material, creating this blueprint ahead of time saved time in the overall development process. The paper flowcharts had originally been developed as a graphic representation of a complex decision formula set forth in the text of applicable Family Law.

Using Lectora to translate the paper charts into a series of hyperlinked pages, we quickly found different paths than those previously outlined in the paper flowcharts, were required to make them logical and user-friendly onscreen. We used hand-drawn blueprints of these new decision-making paths, a sample of which is formalized for legibility in Figure 4.1.

![Figure 4.1: Decision Making Mapping (Top: Handwritten Copy, Bottom: Formatted for Client Approval)](image)

In addition to creating this blueprint, we also found storyboarding each page the user would come in contact with was beneficial for overall development time. For this particular project, because only the delivery method was changing rather than the content, client approval was needed only at the conclusion of development. This allowed us to use handwritten decision-making paths and storyboards. However, should the client have required approval during the design process, a clear diagram as seen in Figure 4.2 would have been submitted.

![Figure 4.2: Storyboard (Top: Handwritten Copy in Design Phase, Bottom: Formatted for Client Approval)](image)
After all storyboarding was completed we began developing the actual job aid using Lectora. We began by creating a branching system using Lectora’s preexisting structure of “chapter, section, page” that paralleled our decision making blueprint outlined earlier. This structure is illustrated in Figure 4.3 and shows the branching technique used within Lectora’s developer interface, called the Title Explorer. Once the initial branching was established, functionality was incorporated by hyperlinking action buttons that responded by either proceeding to the next appropriate screen or displaying more information. Detailed information regarding how each decision making path should be hyperlinked, as well as what information should be displayed, was outlined earlier in the decision making blueprint and storyboards. Once all functionality was programmed, the final decision making job aid, the Intergovernmental Case Assistant, was published in html format. (“Intergovernmental” had superseded “interstate” as the client’s term of choice for cases involving more than one jurisdiction.) Alpha and beta tests were conducted with a representative group from the target audience.

The job aid functioned as programmed and staff welcomed this new tool enthusiastically. No design problems were identified and only minor suggestions for changes were offered. The client reviewed and approved the online version, so we then turned to our options for making it available to users. Upon launching this to our target audience, we encountered an additional issue regarding where this tool would be housed, either on our proprietary learning management system or the client’s own intranet training page. While our learning management system would enable us to track user identification, unique usage, total usage and a range of other criteria, by its nature, it required prior registration as well as password log in every time it was used. Housing it on the client’s intranet training page would provide access to every user without registration or log in, but it would not currently allow for tracking any user data. In consultation with the client, and in consideration of the job aid’s original purpose as an easy, just-in-time tool, ease of use was deemed a higher priority than tracking data, and therefore, was hosted on the intranet training page.

V. LAUNCH AND USER REACTION

On initial release of the Intergovernmental Case Assistant, our client sent an email to all office managers informing them of this new tool and asking them to inform their staff of its availability and location on the intranet. Notification was also posted to the home page of the intranet. However, because we opted to house this on the client’s intranet, we initially could not track usage. Three months after its release, we created an assessment survey to identify the target population’s awareness, usage, positive experiences and constructive feedback. Again, an email was sent to office managers. This time however, managers were asked to have all line staff with responsibilities in interstate case resolution complete the survey.

With 202 responses we were able to assess that 36% of our target population had been unaware that the job aid existed, 30% knew about it, but had not tried using it, 15.5% tried it but do not use it and 18.5% use it regularly. Open-ended responses indicated they many of those who had been unaware of it would use it in the future. Those that had tried it, but do not use it indicated that this is because they are experienced and have the procedures memorized. Of those that responded that they had used this tool, 96.6% indicated that it was helpful or very helpful. Interestingly, we did receive a significant amount of written responses that noted some users preferred the paper flowchart previously taught in the classroom based course. As such, we estimate that with a combination of these two resources, the majority of the target population will be able to effectively perform this job task when required. Three months after its initial release, we were also able to begin tracking total usage and these results also correspond to this summation.

To follow up, we intend to survey this target population again, after an adequate period of time, to determine usage by those who initially responded that they were
“unaware of the job aid but would use it in the future.” Changes to this tool will also be made based on the constructive feedback provided by users. These changes include updates to glossary definitions and links to complimentary websites that users tend to utilize in the same interstate case resolution process.

VI. FINAL ASSESSMENT

In analyzing the results from these three assessment methods, we found that despite the initial findings that 50% of the population indicated on the traditional classroom assessment that following the training they were unable to determine the proper action for interstate case resolution, with the combination of the two resources, we have been able to meet the needs of the majority of the target population.

By combining the responses of the initial classroom training assessment with the responses from the separate assessment survey, along with those that indicated that they had enough experience that they did not need any resource, we estimate that we have reached our training and development goal; the target population is now capable of performing this job task without further assistance.

In the future, we plan to continue using this model for topic areas that fit this particular training method. In the aforementioned survey, we also asked users if there were other areas in the human services arena that would benefit from a similar tool. We received a multitude of responses which will need to be assessed further before a determination can be made if this is the appropriate training solution. In order to do so, we will reflect back on this experience and reexamine the following:

1. Who is our audience and what is their preferred method of learning?
2. What is the content and what is the most accessible and simplistic way for the audience to obtain the information they need without providing superfluous content?
3. Do we have the capacity, in terms of both technology and knowledge, to create a tool or will this have to be acquired?
4. Does the purpose of a job aid meet the desired outcome of the content in need of training?
5. Do the design methods used in this model fit the development of this new project and if not, what changes need to be made to accommodate it?
6. What is the most effective way to market this tool to the target population?
7. Where will this tool be housed and how will the target population access it?
8. What procedures should be used to track usage and obtain constructive feedback to make improvements?

By taking these questions into consideration before development begins, we will be able to assess which training method is most appropriate, the best way to meet our target population’s needs, and determine how to execute the most effective and efficient development process.

FOOTNOTES

[1] Authoring software content portion of this paper was originally developed and presented for the 2011 United States Distance Learning Conference, St Louis, Missouri, by Deborah McGuire and Kasa Wahl.

REFERENCES


ACKNOWLEDGMENTS

The authors wish to thank the following people at the Professional Development Program, University at Albany, for their review and support in the publication of this paper; Eugene J. Monaco, Executive Director; June Mastan, Director; Penny LaRocque, Program Manager.

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Published as submitted by the authors. Manuscript submitted March 22, 2013