# What Do Novice eLearning Developers Think about Rapid eLearning Development Programs? (Oct 15)



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"Our case study demonstrates a convenience sample of novice eLearning developers' perceptions and preference toward two RED (rapid eLearning development) programs based on a relatively short time period of usage. The knowledge generated from this study may help understand what features of RED programs novice eLearning users tend to pay attention to and what factors influence their preference and value judgement."

In the United States, eLearning accounts for about one-third of total training hours in corporations. Most of the eLearning content is developed with software that is commonly referred to as rapid eLearning development (RED) programs (Mallon, 2011). Currently, Adobe Captivate and Articulate Storyline are among the most popular RED programs that allow eLearning developers to build eLearning content quickly and inexpensively (Shank, 2010; Shank, 2013a; Shank, 2013b).

In this article, we present an analysis of these two RED programs in order to better understand which features of the programs novice eLearning developers would likely use and which ones they would be less likely to use. We also present a case study that we conducted to answer the question, "What components of the rapid eLearning development programs do novice eLearning developers value, and why?" We believe the results from the study may be useful to eLearning managers and team leaders in guiding the professional development of novice developers.

**Background**

Unlike the traditional eLearning development process, rapid eLearning development involves the increased use of templates and repurposing of existing content and multimedia elements in order to reduce the number of developers involved as well as the time and costs required. It is purported that the use of RED programs instead of traditional authoring programs may help cut down the average time for developing a seat-time learning hour of highly interactive and media-rich eLearning products from 30 – 40 hours to 15 – 20 hours (Ganci, 2011).

Buyers of these RED programs also expect the learning curve for them to be lower than that of other, more sophisticated, eLearning development solutions. For that reason, RED programs attract unskilled and novice practitioners who want to jump-start their ability to produce eLearning products. However, becoming an eLearning developer is still a long journey.

When developing professional skills, learners go through several stages—for example, five stages such as novice, advanced beginner, competent, proficient, and expert (Dreyfus, 2004; Dreyfus and Dreyfus, 1986), or six stages such as unskilled or not relevant, novice, learner, competent, proficient, and expert (Gillies and Howard, 2003). Although not all eLearning developers need to reach the expert level, they would need to become competent enough to use the RED programs to design eLearning products with appropriate instructional design strategies.

Even though the RED programs' relatively short learning curve allows many novice eLearning developers to easily get involved in eLearning development, there is a potential risk if they fail to comply with foundational eLearning design principles, such as the ones that Mayer and others have helped develop based on their research findings (Clark, 2002; Mayer, 2003). These eLearning design principles are:

1. *The multimedia principle*: Adding graphics to words can improve learning
2. *The contiguity principle*: Placing text near graphics improves learning
3. *The modality principle*: Explaining graphics with audio improves learning
4. *The redundancy principle*: Explaining graphics with audio and redundant text can hurt learning
5. *The coherence principle*: Using gratuitous visuals, text, and sounds can hurt learning
6. *The personalization principle*: Use conversational tone and pedagogical agents to increase learning

It is also important that eLearning developers understand how to design eLearning products to help learners handle different types of cognitive load (Nguyen and Clark, 2005):

- Manage *intrinsic cognitive* load (mental capacity required to handle the complexity of the content)
- Maximize *germane* load (mental capacity supported by relevant learning activities such as examples and practices)
- Minimize *extraneous* load (mental capacity disrupted by irrelevant information)

Other tips for designing eLearning products include: not designing slides that look like PowerPoint slides; not presenting a wall of text on the screen; and not designing them so as to make learners completely passive (Shank, 2011).

For those reasons, educational and training programs should focus on teaching novice eLearning developers not only the technical skills of how to use certain features of eLearning development software programs but also how to design eLearning products based on valid eLearning design principles. In our educational institution, we offer several eLearning design and development courses for our Workplace eLearning and Performance Support certificate program. Most of our students who take the eLearning courses are novice eLearning developers who have not developed eLearning products using RED programs. They tend to enroll in the eLearning courses with high levels of excitement about acquiring eLearning development skills. However, their actual experience of learning to use RED programs may differ from their expectations. To better understand novice eLearning developers' experiences of learning to use RED software programs, we conducted a case study in our eLearning classes in which students were required to use Adobe Captivate and Articulate Storyline to develop eLearning products.

**A component analysis of the RED programs**

RED software programs offer common and unique features through a menu-driven user interface. Users develop eLearning products by selecting menu items within a what-you-see-is-what-you-get (WYSIWYG) interface, without having to perform any sophisticated programming or coding. By treating those menu items as the main *components* of RED programs, we first conducted a component analysis of the two RED programs, Adobe Captivate 8 and Articulate Storyline 2 (see Figure 1 and Figure 2). (*Editor's Note: A number of Adobe Captivate features have changed, including the addition of new components, with the release of Adobe Captivate 9 in September, 2015.*)
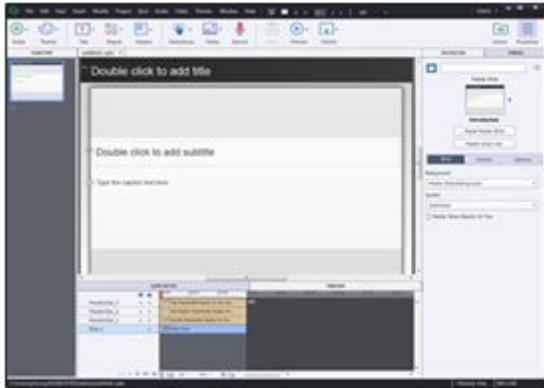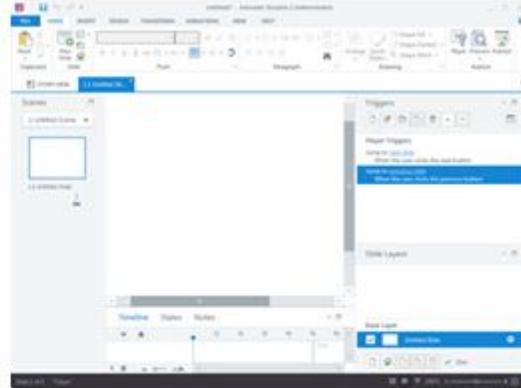
*Figure 1:* A screenshot of Captivate 8



*Figure 2:* A screenshot of Storyline 2

During our component analysis of the two RED programs, we listed all main components available in each program, identified components that are common in both programs, and identified components that are unique to each program. During that process, we realized that it would make more sense to list the components of the RED programs on a continuum from the far left end of "Almost the same" to the far right end of "Unique" with "Common but different" in the middle, as Figure 3 shows.
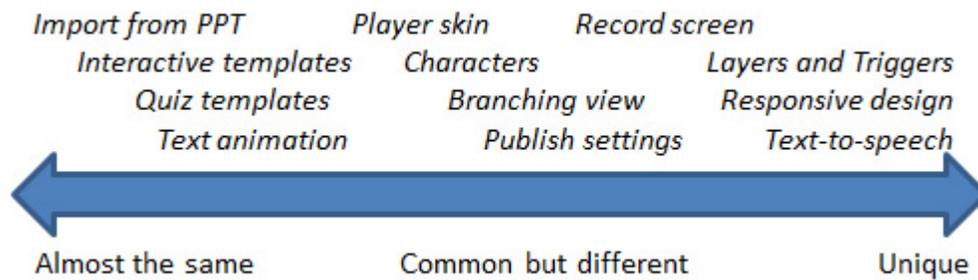


*Figure 3:* Similarity and uniqueness of the two RED programs' components on a continuum

For example, the two RED programs provide very similar approaches to slide transitions, timeline controls, themes, interactive templates and objects, previews, audio, and object animation. One of the most attractive of these similar features for novice rapid eLearning developers is the Import function. It allows users to import existing PowerPoint slides, as well as several pre-configured templates including interactive tabs, drag-and-drop, and an assortment of quiz designs.

Also, the "look and feel" of the player skin is fairly consistent between the two RED programs. These include standard settings for navigation, player controls, table of contents, color and text themes, and bookmarking. However, Storyline also offers an optional Course Resources and Glossary folder tab that can add valuable extensions to programs that are heavy in content. Captivate 8, in contrast, offers a unique toggle view-or-hide control of the table of contents during run-time mode. This feature can help optimize the viewing real estate for course content within the browser.

Characters, also known as pedagogical agents, offer a good opportunity to apply the personalization principle (Mayer, 2003), especially when combined with a conversational type of narrative. Characters work particularly well for soft-skills or scenario-based eLearning courses. Both Captivate 8 and Storyline have a selection of illustrated and photographic characters with a variety of poses. There are pros and cons in each program's character's function. Captivate has different categories of photographic characters (business, casual, and medicine) with a variety of poses. Storyline comes with only one

photographic character and many illustrated characters, and it conveniently allows users to change a character's pose or perspective by using triggers; this functionality is not available in Captivate.

Storyline's Layers as well as Triggers are probably among the most distinguishing features. Layers can display additional content on a given slide at specified intervals or in response to learners' actions. The use of layers allows you to break down a more complex sequence of actions and events into workable steps and string the action together using triggers.

An equally unique feature within Captivate is the text-to-speech feature. In a matter of a few clicks, Captivate allows you to convert slide notes into closed-captioned text, or into audio files using text-to-speech software from NeoSpeech. This add-on software provides several different voices to choose from. Other unique features within Captivate 8 that are worth exploring include its responsive design for adaptability to different delivery devices, Aggregator Project, and Multi-SCORM Packager features.

This component analysis helped us understand which features of the programs novice eLearning developers would likely use and which ones they would not be likely to explore and use in their eLearning products in less than ten weeks of learning in a three-credit course. Our eLearning course did not have planned course activities that introduced students to some of the intermediate and advanced features of the programs such as Multi-SCORM Packager or SCORM output settings. Although it is possible that some students explored those intermediate and advanced features of the programs on their own, it is unlikely that they became competent to use those additional features within the short timeframe, while following planned course objectives and requirements.

**A case study with a user-value analysis of the RED programs**

We used a convenient sample of novice eLearning developers who enrolled in a graduate-level rapid eLearning development class at a mid-size university in the northwestern region of the United States during spring and summer of 2014 and 2015. Among the total of 54 students who enrolled in the class during the four semesters, 31 students (57 percent) voluntarily participated in the study. The main question that we addressed during this study was: *What components of the rapid eLearning development programs do novice eLearning developers value, and why?*

**Data collection**

The rapid eLearning development class was a ten-week online class, where students were required to use Captivate 8 and Storyline 2 to complete four eLearning products as their class projects. Students were assigned to develop different types of eLearning products—declarative, procedural, and situated (Chyung, 2007). Declarative knowledge (knowing what) is often included in introductory content and orientation training. Procedural knowledge (knowing how) is often demonstrated in software and other technical training. Situated knowledge (knowing when and why) is often developed through scenario-based learning. Students developed their eLearning products with five to 15 minutes of seat-time learning. Students learned not only technical skills on how to use the RED programs, but also eLearning and design principles and guidelines (see Clark, 2002; Mayer, 2003; Nguyen and Clark, 2005; Shank, 2011).

At the end of the course, we collected data from the students using an anonymous user-value analysis survey. This 20-item survey measured users' demographic information and their perceptions about the overall quality of the RED programs. The survey also measured the values of several specific components of the programs that are likely used by novice eLearning developers, and how well those components supported the instructional design strategies that they would incorporate in their eLearning products.

The average age of the survey respondents was 41 years old (ranging between 26 and 59). Most respondents held full-time job titles such as instructional designers, content developers, or training

managers, in various industries. About half (51 percent) of the respondents have had instructional design as part of their job responsibilities for more than five years, while 33 percent have had those responsibilities for one to five years, respectively. Even though their current job responsibilities included instructional design or similar roles, most of them reported having limited experience in eLearning development. On a five-point scale (novice, advanced beginner, competent, proficient, and expert) that measures their current eLearning development, 64 percent of respondents characterized themselves as novices or advanced beginner in terms of their current eLearning development skills. Two-thirds of the respondents had never used Captivate or Storyline before they took the class (60 percent and 74 percent, respectively). This put them in the "novice eLearning developers" category. They indicated that it was very important to learn eLearning skills (mean = 4.7 on a five-point scale, where one is not important at all and five is very important). The dominant reason for acquiring eLearning skills was for their career development.

**Findings**

Overall, the novice eLearning developers who participated in the study rated Storyline more favorably than Captivate. Paired-sample t-tests on the mean differences showed that they rated some aspects of Storyline significantly higher than those of Captivate. That is,

- How quickly they can learn to use it: Mean (Captivate) = 3.35, Mean (Storyline) = 4.29, $t$ (30) = -4.76, $p < .001$.
- How user-friendly the interface is: Mean (Captivate) = 3.29, Mean (Storyline) = 4.48, $t$ (30) = -5.84, $p < .001$.
- How quickly they can develop a product with it: Mean (Captivate) = 3.45, Mean (Storyline) = 4.25, $t$ (30) = -4.29, $p < .001$.
- How useful the menu items and other features are: Mean (Captivate) = 3.58, Mean (Storyline) = 4.32, $t$ (30) = -3.20, $p = .003$.
- How well it helps them incorporate their instructional strategies: Mean (Captivate) = 3.70, Mean (Storyline) = 4.19, $t$ (30) = -2.80, $p = .009$.
- How the final products look: Mean (Captivate) = 3.87, Mean (Storyline) = 4.38, $t$ (30) = -2.49, $p = .018$.

The most useful features of Captivate that the novice eLearning developers frequently mentioned were: text-to-speech, closed captioning, and software simulation, whereas the most useful features of Storyline reported were layers, triggers, characters, and branching view. The novice eLearning developers were asked whether they could perform several eLearning development tasks better with Captivate or Storyline. Their assessments are summarized below and shown in Figure 4.

**Captivate is better when:**

- Adding closed captions (related to the redundancy principle and to comply with Section 508)
- Adding audio narration to slides (for the modality principle)—e.g., using the text-to-speech feature
- Developing simulated software training products (related to the multimedia principle)

**Captivate and Storyline are similar when:**

- Adding text next to graphics during simulated software training (related to the contiguity principle)
- Developing slides that do not look like PowerPoint slides
- Aligning time sequence of objects (text, images, buttons, etc.) using the timeline
- Developing knowledge questions
- Publishing eLearning products

**Storyline is better when:**

- Adding images to slides (related to the multimedia principle)
- Formatting text (e.g., changing font type, size, color, line spacing, etc.)
- Adding characters to slides (related to the personalization principle)—i.e., availability of various poses
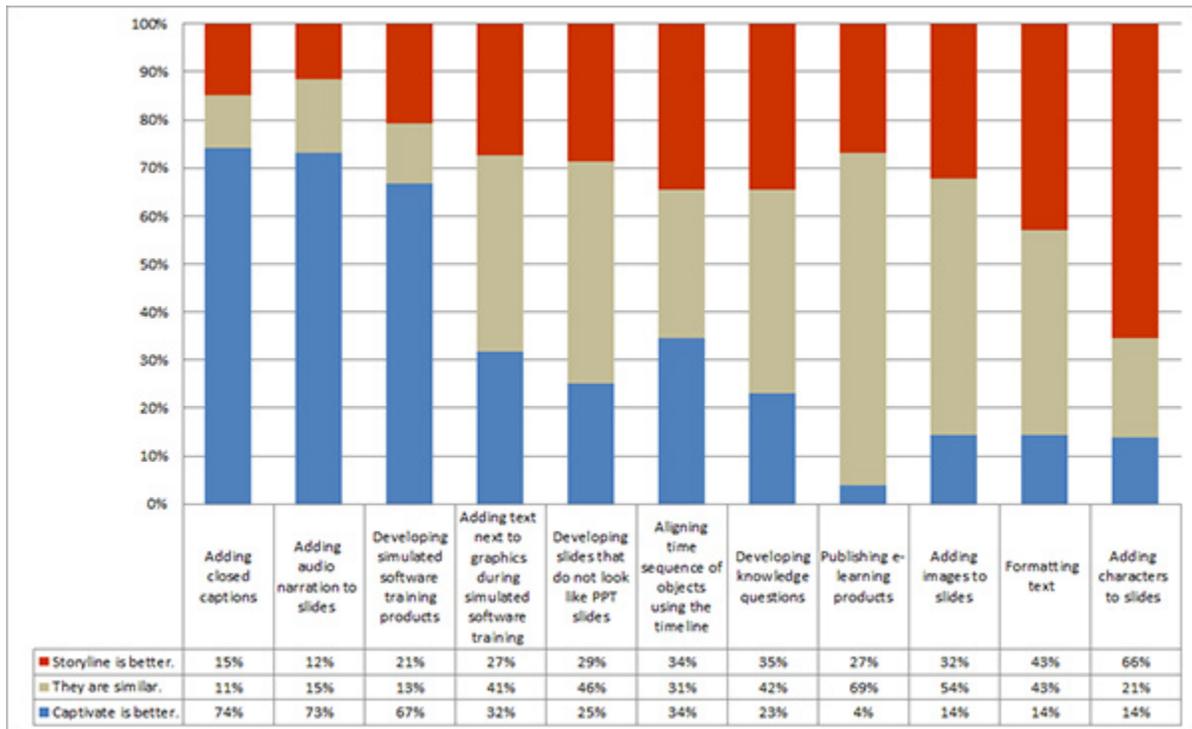


| | Adding closed captions | Adding audio narration to slides | Developing simulated software training products | Adding text next to graphics during simulated software training | Developing slides that do not look like PPT slides | Aligning time sequence of objects using the timeline | Developing knowledge questions | Publishing e-learning products | Adding images to slides | Formatting text | Adding characters to slides |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Storyline is better. | 15% | 12% | 21% | 27% | 29% | 34% | 35% | 27% | 32% | 43% | 66% |
| They are similar. | 11% | 15% | 13% | 41% | 46% | 31% | 42% | 69% | 54% | 43% | 21% |
| Captivate is better. | 74% | 73% | 67% | 32% | 25% | 34% | 23% | 4% | 14% | 14% | 14% |

*Figure 4:* **User evaluation on several features of the two RED programs**

The novice eLearning developers said that they felt motivated to learn to use Captivate and Storyline for the following reasons and context:

- Because the programs allow them to develop interactive eLearning products and help them advance their career
- Because they see the skills necessary for their current or future career development
- When they are provided clear directions on how to develop such eLearning products
- When they review eLearning samples that they want to develop

However, some of the things that demotivated them while using Captivate included:

- Their organization does not support Captivate
- Only a few tutorials are freely available on the web (especially, lack of video-based tutorials)
- There is a steep learning curve (e.g., getting used to its user-interface) compared to Storyline

Some of the things that demotivated them while using Storyline included:

- Their organization does not support Storyline
- Its cost was high

- A Mac version is not readily available

Understandably, the novice eLearning developers also indicated that they felt overwhelmed by the many features provided in both software programs.

The most frequently mentioned instructional strategies they wanted to incorporate in their eLearning products were simulated software training, scenario-based learning, knowledge quizzes, and interactive practice activities. We categorize these types of eLearning products as fairly interactive and media-rich. To develop these instructional strategies, about two-thirds of the novice eLearning developers (62 percent) said they would prefer using Storyline and the most common reason for their decision was its user-friendliness and ease of use. The remaining one-third of them who said they would prefer using Captivate indicated the following reasons for selecting Captivate: its easy-to-use feature for developing simulated software training products, its unique features such as text-to-speech, its compatibility for both Windows and Mac systems, and its advanced features such as variables and libraries.

**Discussions**

Organizations adopt rapid eLearning development tools to keep up with their business needs; for example, fast development and deployment of training programs to update the knowledge and skills of their workforce (Mallon, 2011). Today's employers expect their instructional designers to possess competencies other than ID-specific skills, including abilities to develop eLearning solutions using authoring programs (Munzenmaier, 2014). Most survey respondents in our study were instructional designers who decided to learn about eLearning development for that very reason, and evidence from this study suggests that novice eLearning developers would likely benefit to start their journey of eLearning development with RED programs such as Captivate and Storyline, rather than more sophisticated software programs.

The types of content that are most frequently developed by using RED programs include: Introductory content, testing and assessment, compliance and mandatory training, software and application training, product demonstrations, orientation training, and technical training (Mallon, 2011), which seem to fall into the declarative and procedural types of knowledge.

Software users would likely evaluate the worth of the software products based on the degrees of power and ease-of-use of the products compared against the users' own needs and costs of the products. For example, Figure 5 illustrates two hypothetical examples of software programs (Product #1 and Product #2) with different levels of power, ease-of-use, cost, and user needs. Product# 1 (indicated with solid lines) has higher power but also higher cost and lower ease-of use than Product #2 (indicated with dotted lines). If users do not need to use all of the powerful features that Product #1 provides, they may use the ease-of-use factor (internal) and/or the cost factor (external if they purchase it or external if their organization purchases it for them), and Product #2 may look more favorable to them. However, a caveat here is that novice eLearning developers may not be able to accurately assess the power of each RED program, and their assessment would heavily rely on the ease-of-use criterion when the users' needs can be satisfied with either product. This may be the reason why most of the survey respondents in our study expressed their preference of Storyline to Captivate, but were frustrated that their organizations have not decided to purchase Storyline.
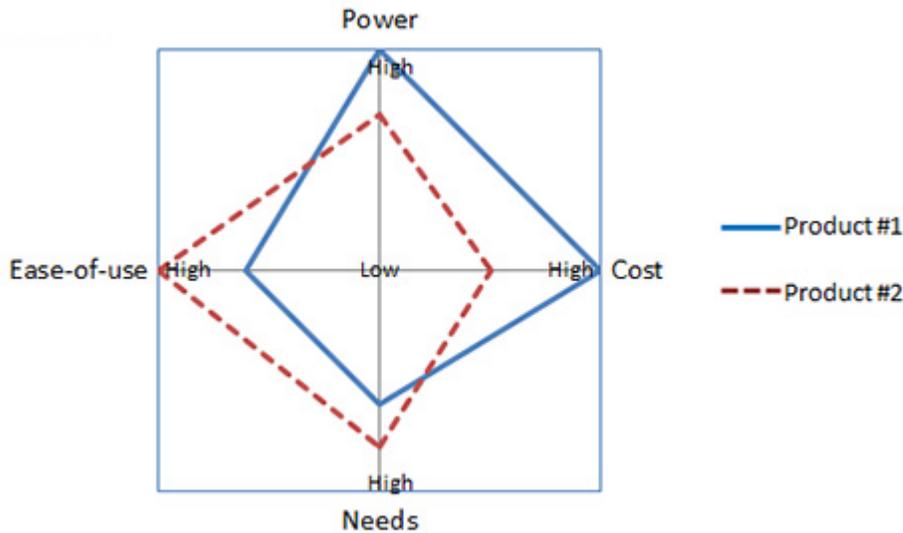
*Figure 5:* **A set of software selection criteria**

Also, although RED programs in general are viewed as easy to use, Captivate is not considered to be the easiest one to use. Ganci (2011) estimates that on a 10-point scale where 1 = hardest and 10 = easiest, Captivate's power level is 7 and its ease-of-use level is 5, whereas Articulate Presenter and Camtasia Studio have a power level of 5 but an ease-of-use level of 8 or 7. Our survey data seems to support this notion; the novice eLearning developers expressed that given a choice, they would choose to use Storyline over Captive for its ease-of-use.

However, asking novice eLearning developers to choose one option does not help paint the whole picture of eLearning development. eLearning developers usually use more than one RED program, and this trend increases as the eLearning developers' experience increases (Ganci, 2011). Thus novice eLearning developers may start with one RED program, but add more RED programs to their toolbox as time goes by and their eLearning development skills improve. Subsequently, the eLearning developers' and organizations' needs may increase as well. In the beginning, novice eLearning developers may be thinking about developing simpler declarative and procedural types of content. Then, as they develop more skills, they may venture to develop their products with more sophisticated scenario-based branching techniques and highly interactive and media-rich content. Thus, they may seek products like Figure 5's Product #1.

Our case study demonstrates a convenience sample of novice eLearning developers' perceptions and preference toward two RED programs based on a relatively short time of usage. The knowledge generated from this study may help understand what features of RED programs novice eLearning users tend to pay attention to and what factors influence their preference and value judgement. However, it should not be used to draw conclusions regarding the quality of the different RED programs or the level of popularity between these two RED programs in the industry.

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