The present study addresses the complex challenge of showing how teacher candidates created original children’s literature in the form of digital stories for their P-12 students within a clinical model. Through a step-by-step process, the researchers explain how to create digital stories that align with standards and students’ needs. The preservice teachers with guidance from currently practicing teachers and university faculty employed multiple measures of P-12 student data, curricular mapping, standards and Universal Design lesson plan template to engage students with customized learning experiences.

In recent years, interest in teacher preparation has risen to the forefront of national conversations about the roles colleges of education play. A major outcome of this discussion is a renewed interest in clinical teacher preparation programs. According to the Council for the Accreditation of Educator Preparation (CAEP), clinical partnerships and experiences are a vital part of preparing teachers; in particular, according to Standard 2 (CAEP, 2015), there should be “technology-enhanced learning opportunities” within clinical placements.

This research study explores how teacher candidates, within a clinical teacher preparation program resulting in dual elementary and special education licensure, combined concepts related to children’s literature and Universal Design for Learning (UDL). The clinical model, supported by university faculty (UF), teacher candidates (TC) and supervising classroom teachers referred to as adjunct faculty (AF) delivers an emersion experience. TCs active within the clinical model were supported by UF and AF. Embedded within the schools receiving instruction from UF in the morning and classroom experiences with the AF in the afternoon. The TCs’ classroom experiences were mentored by UF and AF.

The TCs used elementary students’ reading performance scores from Renaissance STAR (STAR Early Literacy and grades 1-6 used STAR Reading) to create data-driven original children’s literature digital stories specifically designed to enhance target students’ learning. The created stories were included by the TCs within Universal Design for Learning (UDL) lesson plans delivered under the supervision of the AF. The TCs then reflected upon their experience using the Texas State University Student Teaching Program Post Observation Conference Protocol Questions (2015). This process is engaged using the Data-Based Decision Making Model as a basis for design and discussion.

Literature Review Theoretical Framework

With the rise in importance and relevance of 21st Century skills, teachers need to understand, more than ever, how to embed technology and literacy within the
classroom setting. One theoretical approach to developing this understanding is the application of multimodal social semiotics (Kress, 2010). With this approach, people make meaning using a variety of modes and signs. Essentially, meaning can be made from any combination of text, visual elements, sound, and even gestures. The social aspect of multimodal social semiotics refers to the way that we use the world around us to make meaning—culture informs our semiotic choices and influences the messages we create and how we create them.

The emphasis on how meaning is expressed and received is influenced by the critical factor of design. According to Kress (2010), design involves an inherent awareness of how the modes are being used to communicate meaning. This awareness echoes Seigel’s (2006) call for intentionality when using multimodalities, particularly in classroom settings. Authors determine how best to convey their message by assessing the affordances and constraints of a mode (e.g., music, alphanumeric character, voice, etc.), and related tool (e.g., media site, Google drawing) (Kress, 2005).

The richness of semiotics paired with multimodalities via technology creates significant opportunities for P-12 students to engage with text (e.g., Shanahan, 2012; Spires, et al., 2012); however, practitioners must first learn how to merge these constructs. Digital stories allow focus on semiotic elements that create multimodal learning experiences that address P-12 student learning requirements, styles and interests giving preservice teachers an opportunity to connect P-12 students with learning in a meaningful, deliberate and instantly engaging manner. The present study addresses this complex challenge by showing how teacher candidates in a clinical model with the use of technology, created original children’s literature in the form of digital stories for their P-12 students using the format of a Universal Design lesson planning through data-driven practice.

**Clinical model.** Clinical teacher preparation affords teacher candidates the opportunity to apply what they learn about pedagogy and to develop an awareness of the most effective teaching practices. In a three-year study of teacher candidates studying to be middle-school English Language Arts teachers, Pope and her colleagues (2011) found that TCs valued their clinical experiences and learned to be adaptable professionals. Moreover, the use of a multimodal project, in this case using audiovisuals and technology to teach *The Outsiders* (Hinton, 1967), provided opportunities for the teacher candidates and their middle school students to become highly engaged with the dual processes of teaching and learning.

Teacher candidates also begin to assume the identity of a teacher during repeated opportunities for clinical practice (Sutherland, Howard, & Markauskaite, 2010). Izadinia’s (2013) meta-analysis of existing literature on TC’s identity formation supports the critical nature of clinical practice by supporting broad and frequent clinical experiences. However, Izadinia (2013) also notes that clinical experiences may be more challenging for TCs than the research represents. This present study explores how TCs approached the challenge of creating data-driven instruction using a multimodal framework.

**Teacher candidates and technology.** Integrating technology experiences is part of CAEP’s (2015) standards for teacher education and the International Literacy Association’s (2010) standards for reading educators. Understanding how technology can be used to support content knowledge and pedagogical knowledge is crucial for teachers at any level (Koehler & Mishra,
yet teacher candidates need more authentic, embedded opportunities to incorporate technology and literacy in school settings during clinical experiences (Borsheim, Merritt, & Reed, 2008). In particular, TCs may not be utilizing technology in creative ways (Stobaugh & Tassell, 2011). Additionally, technology-integrated lessons are more successful when they involve a partnership between local schools and universities (Polly, Mims, Shepherd, & Inan, 2010). The present study capitalized upon the clinical setting and creative applications in digital stories to showcase how TCs can master the technology expectations in CAEP’s (2015) Standards 1 and 2.

**Children’s literature.** Children’s literature is typically viewed by teacher candidates in the way they were taught and learned with it as children. This teacher candidate bias can lead to restrictive thought process toward the use of children’s literature in the classroom. In elementary schools reading is a subject, not literature. This lack of subject emphasis at the elementary level can tend to create an environment that primarily promotes “free time” use (McIlhagga, 2016). This type of usage is beneficial but, can children’s literature use by teacher candidates be more embedded within curriculum? The Common Core Standards Initiative (NGA & CCSSO, 2010) has recently added a greater emphasis on the use of interdisciplinary instruction (Stolle & Frambahugh-Fritzer, 2014). The increased level of interdisciplinary instruction being encouraged can be supported strongly by children’s literature.

**Digital storytelling.** Storytelling is a part of human history. It is our most ancient art form. Over time storytelling evolved from oral storytellers with crude cave paintings to technology rich multimodal works that engage all the senses (Czarnnecki, 2009; Frazel, 2010). The technology packed version of storytelling, digital storytelling, can have many uses in the school setting. Digital storytelling is acknowledged to help students gain skills and experience in communication, interpersonal skills, technology literacy, visual literacy and creativity (Porter, 2004).

The International Society for Technology in Education states that digital stories can: engage and motivate students to learn core curriculum; adds to learning relevancy; be hands-on and meet diverse learners needs; promote group work; can be individualized; support the use of technology and cross-curricular learning (Frazel, 2010). The use of hands-on technology meets the multimodalities in digital storytelling allowing messages to be transmitted across systems (Kress, 2010). Digital story authors can utilize any combination of sound (e.g., music, voices, noises from nature), images (e.g., photographs, drawings), alphanumeric characters to create meaning through the use of story and technology.

**Universal design.** The Higher Education Act of 1965 encouraged the use of universal design for learning (UDL). UDL in lesson planning is an effective way to meet the needs of all students. The UDL lesson plan is set up to provide teachers greater opportunity to include increased differentiation options and multiple strategies to meet individual student needs (Courey, Tappe, Siker, & LePage, 2012). The three principles of UDL are to provide multiple options of representation (various ways of gaining knowledge), expression (allows for alternative means of assessment) and engagement (actively attempting to address learner interests). These multiple options and strategies within the UDL lesson planning process can potentially be supported by both children’s literature and digital storytelling.
Discussion

The movement toward data-driven instruction arose out of an articulated desire to have demonstrated impact on P-12 students. The act of creating data-driven instruction can be accomplished through multiple means. For the purpose of this study we will be using the Data-Based Decision Making Model. This model provides a method for continuous data-based improvement that will impact P-12 students. The model contains the following components;

1. Goal identification,
2. Data collection,
3. Data reflection,
4. Identify area for improvement,

This model was applied by university faculty and teacher candidates to the creation of original children’s literature through digital story in a Universal Design lesson plan within the curriculum. The following outlines the Data-based Decision Making Model process’ steps specific to our study.

Goal identification. The following questions were central to the formation of goals.

- How can children’s literature and special education content be combined in a clinical model?
- How do teacher candidates in a clinical model use digital stories as a form of universal design?
- How do teacher candidates use data to create digital stories as a form of children’s literature?

The goal developed was identified as central to the needs of the clinical model collaboration process toward meeting students learning needs.

- The teacher candidates in this clinical model course with the use of technology, will create original children’s literature in the form of digital stories for their P-12 students using the format of a Universal Design lesson planning through data-driven practice.

Data collection. The data were collected in the following listed steps.

1. Introduction of teacher candidates to the use of STAR student data, curriculum map and Individual Education Programs (IEP’s).

This data was introduced to students on the first day of class. The STAR reports took the form of handouts that students could examine from class data. The STAR reports were either Early Literacy or Reading based on the TC’s classroom placement. TC’s that were placed within a kindergarten classroom used STAR Early Literacy and grades 1-6 used STAR Reading. The customization was based on the best process to address student need. The curriculum map was used to ensure the TC’s were presenting information to our K-6 students on content that was currently being covered in the classroom. The classroom student IEP’s were used to identify diverse needs present within the classroom and consider means of accommodation.

2. Talk about the types of genre, formats and characteristics of children’s literature (with presentation).

Lecture materials were provided for the students through Lecture, PowerPoint, Prezi and continued access was allowed via class automation system Blackboard. The genre material covered included genre types, characteristics and examples of children’s literature within each genre category. Formats of children’s literature were addressed through a Prezi that combined the types of formats with description, primary use and age relevancy. This combination of information was designed to give TC’s a broad overview of what a children’s book
entry would look like and how it would be categorized. The ultimate goal being to aid the TC’s in creating their own original children’s literature to share with K-6 students.

3. Educate about the UDL Lesson plan with presentation.
The Lecture on UDL created by in general was delivered by special education faculty member prior to the UDL lesson plan instruction. The UDL lesson plan created by Bauleke and Young (2011) instruction was delivered jointly by special education and library media education faculty members via PowerPoint. The UDL lesson plan was augmented to contain additional notes and a rubric to aid student understanding and scaffold learning as many of the TC’s were creating a lesson plan for the first time (see Appendix A to view the italicized augmented sections).

4. Learn about Storybird.
The web 2.0 tool storybird.com was selected as a user friendly option for students to employ for the creation of their original children’s literature. Storybird allows for multiple themes, formats and opportunities to create. The Storybird tools function on the basis of theme selection. When a theme is selected the student can only choose from visuals within that theme. TC’s were able to choose the best theme to meet curricular need, format to meet age level, repeat the process and edit as needed. The TC’s were able to access the digital stories online through the Storybird website and for a fee download a PDF or print a hard copy from the Storybird website to share with targeted students.

5. Create Lesson Plan with embedded Storybird.
The UDL lesson plan created by Bauleke and Young (2011) was provided with accompanying instruction as a template with certain sections completed and with in-text notations to aid in student understanding. Providing scaffolding for student lesson plan completion was essential as this was the first time they had completed a UDL lesson plan. The augmented sections are indicated in italics (see Appendix A to view the italicized augmented sections).

6. Consult with Adjunct Faculty (AF).
The process of consultation with AF’s was extremely impactful on the TC’s progress. The TC’s were able to get feedback on the lesson plan, student engagement and classroom management techniques to aid with lesson delivery. Many TC’s modified the initial lesson plan submission based on AF feedback.

7. Consult with University Faculty (UF), (20 minute session).
The UF consultation process allowed for the TC’s to get feedback based on assignment requirement, lesson plan, student engagement and classroom management techniques to aid in lesson delivery and assignment completion. The feedback was focused on the UDL lesson plan and rubric. The sections and rubric led the conversation (see Appendix A to view the rubric).

8. Submit to UF via BlackBoard for written feedback.
The completed UDL lesson plan was then submitted to the BlackBoard submission site for feedback that was addressed and returned through the online course management site. This feedback was delivered by the UF who was to observe the TC during their delivery of the lesson. This feedback prior to teaching focused primarily on support of lesson delivery.

9. Submit to AF for feedback.
The AFs were asked to review the TC’s lesson plans following submission and completion to ensure that the lesson matched student need and curricular requirements. Feedback at this stage encompassed a wide array of mentor engagement levels and focused on TC need. The AF feedback at
this stage is confirmation of work progress toward lesson delivery.

10. Peer think-pair-share feedback session.
The Peer think-pair-share feedback session allowed TC’s the opportunity to engage with other class members regarding the lesson planning process. The TC’s were able to have substantive conversations with peers that focused on lesson planning, classroom management and lesson delivery. This session allowed for the group to share collective wisdom and support fellow TC’s.

11. Teach lesson while being observed that includes the Storybird digital story.
The TC’s taught the UDL lesson to their assigned class while being observed by a member of the UF and AF. The TC’s experience was an individual, whole group teaching experience. The UF were there and took notes on the TC’s performance of the lesson. The AF were there primarily to observe and provide feedback. UF and AF in the course of observation helped students as needed to ensure a successful lesson for the K-6 students.

12. Receive feedback from UF and AF post lesson.
The feedback from the UF and AF was based on the Texas State University Student Teaching Program Post Observation Conference Protocol Questions. The following questions were utilized to evoke reflective thought related to lesson delivery that would foster a mindset of improvement. The protocol was followed by each of the UF observers.

- What area would you like to improve?
- Why is this area important to the success of a lesson? What might happen if you didn’t attend to this area?
- When you plan your next lesson, what can you think about or do to address this area?
- When you developed your lesson plan, how did you decide on the pacing of the lesson so sufficient time was allowed for each segment?”
- Let’s talk about the skill you taught. Where did some students struggle with the skill? Why do you think they struggled? Is there anything you could have done in the lesson to improve their performance? Is there a part of the lesson you feel could have run more smoothly?
- If you think about what we just discussed, how could you use this in a future lesson?
- What were some of the good things you heard in our discussion today?

Data reflection. The TC’s were required to complete and submit a reflection based on the completion of the above mentioned steps. They were to address each of the aspects and do a word document write-up reflection that was submitted to the Blackboard submission section.

Identify area for improvement. The TC’s were required to complete a reflection consultation and submit a reflection based on the completion of the above mentioned steps. The reflection used was the Texas State University Student Teaching Program Post Observation
Conference Protocol Questions (Office of Educator Preparation, College of Education, Texas State University (2015). Within this instrument the following question addressed the ability to identify areas for improvement, “Based on our discussion today, what will be your goals for your next observation in instruction, in classroom management and in planning?” (TSU, 2015). The responses guided the focus for the next lesson plan delivery.

Collaborate and disseminate. The TC’s were required to collaborate and disseminate their work throughout the process. They collaborated with UF, AF and peers for the purpose of feedback toward improved practice. TC’s disseminated the completed work through sharing, submission and teaching.

Conclusion Engaging teacher candidates in authentic practice is at the forefront of teacher preparation across the United States (CAEP, 2015). Additionally, teacher candidates need more authentic, embedded opportunities to incorporate technology and literacy in school settings during clinical experiences, (Borsheim, Merritt, & Reed, 2008). With the rise in importance and relevance of 21st Century skills, teachers need to understand, more than ever, how to embed technology and literacy within the classroom setting. The richness of semiotics paired with multimodalities via technology creates significant opportunities for P-12 students to learn (e.g., Shanahan, 2012; Spires et al., 2012); however, practitioners must first learn how to merge these constructs. The process described allows TC’s the opportunity to explore the use of technology, literacy and multimodalities via technology.

The digital stories allow focus on semiotic elements that create multimodal learning experiences that address P-12 student learning requirements, styles and interests giving preservice teachers an opportunity to connect P-12 students with learning in a meaningful, deliberate and instantly engaging manner. This study addressed a complex challenge by showing how teacher candidates created original children’s literature in the form of digital stories for their P-12 students within a clinical model.

Through the described step-by-step process, the researchers explained how to create digital stories that align with standards and students’ needs. The TC’s with guidance from currently practicing teachers and university faculty employed multiple measures of P-12 student data, curricular mapping, standards and Universal Design lesson plan template to engage students with customized learning experiences. UF learned how to use digital stories as a formative assessment for gaining insight into teacher candidates’ understandings of concepts of print, text features, text complexity, and reading development of K-6 students. AF and TC’s learned how to create digital stories that align with their students’ interests and abilities for use in their classroom.

References


Shanahan, L. (2012). Use of sound with digital text: Moving beyond sound as


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Appendix A

UDL LESSON PLAN

<table>
<thead>
<tr>
<th>Subject</th>
<th>Grade</th>
<th>Date</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>UNIT/LESSON</th>
<th>Lesson Title</th>
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</table>

<table>
<thead>
<tr>
<th>CONTENT OBJECTIVE(S)</th>
<th>Student will be able to recognize content and highlighted vocabulary.</th>
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</table>

<table>
<thead>
<tr>
<th>Curriculum Map Core Standard</th>
<th>Curriculum Map Core Standard&lt;br&gt;Deconstructed Standard&lt;br&gt;I can Statement</th>
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</table>

<table>
<thead>
<tr>
<th>FOCUS/ KEY QUESTIONS</th>
<th>Insert Content Key Question(s) &lt;br&gt;Insert Vocabulary Key Question(s)</th>
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</table>

<table>
<thead>
<tr>
<th>LESSON PRE-ASSESSMENT</th>
<th>Do Quick Questioning on content and vocabulary with “opportunities to respond” feedback. &lt;br&gt;Fill in four questions.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>BARRIERS TO LEARNING</th>
<th>Specific to each classroom. &lt;br&gt;*Take these off of your planning form (e.g. students being pulled from class, student using hearing impairment, behavior) &lt;br&gt;Enter two barriers and how you will address.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>PLANNING WITH UDL</th>
<th>Multiple means of representation &lt;br&gt;Video – audio and visual information &lt;br&gt;Use of multiple media – pictures, texts, web, etc. &lt;br&gt;Physical or Symbolic Representations&lt;br&gt;Bring in items that represent content and/or vocabulary. &lt;br&gt;Storybird Book &lt;br&gt;Multiple means of engagement &lt;br&gt;Choice of presentation &lt;br&gt;Work in groups to foster collaboration and communication &lt;br&gt;Independent work/small group &lt;br&gt;Multiple means of action and expression &lt;br&gt;Teacher observation and &lt;br&gt;Read aloud to students (incorporate reading checks) &lt;br&gt;Allow students to read segments</th>
</tr>
</thead>
</table>
feedback on note-taking sheets  
Choice of presentation format  

**Formative assessment (questioning, leading, next/then questions)**

| READING/ VOCABULARY | **BEFORE:** Fill in strategy  
**DURING:** Fill in strategy  
**AFTER:** Fill in strategy |
|----------------------|------------------------------------------------------------------|
| ASSESSMENT | Questions with “opportunities to respond”  
*Make sure this is “universal” |
| MATERIALS | Storybird book  
Handout  
Picture  
Representation |

### LEARNING STRATEGIES

| WARM UP (5 min) | Pre-assessment, Pre-correction (behavior driven) & I can statement  
*Pre-correction may occur throughout |
| INTRODUCTION/ MOTIVATION | Pre-teaching (content and interest driven)  
Questioning, Sharing, Making Predictions  
*Be creative |
| WHOLE CLASS ACTIVITY (20 min) | Instruction: Read aloud  
Modeling: Skill based (e.g. prepared questions of text |
| GUIDED & INDEPENDENT PRACTICE WITH UDL | Use ideas from the pre-planning sheet. |
| CLOSURE/ EXIT PASS/ (5min) | Activities with “opportunities to respond”.  
*Bring it together |
| HOMEWORK | NA for this lesson |

The lesson plan rubric was designed to address the assignment requirement levels of completion.

<table>
<thead>
<tr>
<th>Lesson Plan Rubric</th>
<th>Unsatisfactory</th>
<th>Basic</th>
<th>Proficient</th>
<th>Distinguished</th>
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<tr>
<td>Objective 2 Points</td>
<td>Not Present</td>
<td>Present</td>
<td>Present and related to</td>
<td>Present and related to content and</td>
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<tr>
<td>Lesson Plan Rubric</td>
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<td>Basic</td>
<td>Proficient</td>
<td>Distinguished</td>
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<tr>
<td>-----------------------------------------</td>
<td>----------------</td>
<td>----------------</td>
<td>------------------------------------------------------</td>
<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>Curriculum Map/Core Standard 2 Points</td>
<td>Not Present</td>
<td>Present</td>
<td>Present and aligned to Curriculum Map/Core Standard</td>
<td>Present and aligned to the Curriculum Map/Core Standard with AF approval</td>
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<tr>
<td>Focus/Key Questions 2 Points</td>
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<td>Present</td>
<td>Present and related to content</td>
<td>Present and aligned to the Curriculum Map/Core Standard</td>
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<tr>
<td>Lesson Pre-assessment 2 Points</td>
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<td>Present</td>
<td>Present and related to content</td>
<td>Present and aligned to the Curriculum Map/Core Standard</td>
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<tr>
<td>Barriers to Learning 2 Points</td>
<td>Not Present</td>
<td>Present</td>
<td>Present and Addressed</td>
<td>Present and Addressed with description</td>
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<tr>
<td>Planning with UDL 2 Points</td>
<td>Not Present</td>
<td>Present</td>
<td>Present with most aspects present</td>
<td>Present with most aspects present</td>
</tr>
<tr>
<td>Reading/Vocabulary 2 Points</td>
<td>Not Present</td>
<td>Present</td>
<td>Present with activity</td>
<td>Present with activity and scripting</td>
</tr>
<tr>
<td>Assessment 2 Points</td>
<td>Not Present</td>
<td>Present</td>
<td>Present with activity</td>
<td>Present with activity and scripting</td>
</tr>
<tr>
<td>Materials 2 Points</td>
<td>Not Present</td>
<td>Present</td>
<td>Present and Curriculum Connected</td>
<td>Present and Curriculum Connected with multiple formats</td>
</tr>
<tr>
<td>Warm-up 2 Points</td>
<td>Not Present</td>
<td>Present</td>
<td>Present with activity</td>
<td>Present with activity and scripting</td>
</tr>
<tr>
<td>Introduction/Motivation 2 Points</td>
<td>Not Present</td>
<td>Present</td>
<td>Present with activity</td>
<td>Present with activity and scripting</td>
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<tr>
<td>Whole Class Activity 3 Points</td>
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<td>Present</td>
<td>Present with activity</td>
<td>Present with activity and scripting</td>
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<tr>
<td>Guided &amp; Independent Practice 3 Points</td>
<td>Not Present</td>
<td>Present</td>
<td>Present with activity</td>
<td>Present with activity and scripting</td>
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<tr>
<td>Closure/Exit Pass 2 Points</td>
<td>Not Present</td>
<td>Present</td>
<td>Present with activity</td>
<td>Present with activity and scripting</td>
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