

Biology DemoEd : *Content Creation*

Spring 2024 Capstone II

Curated by:

Franklin Neves – Batiah Sinepha

Alisa Chavez – Shanice Badoo

David Giles



Introduction

What is DemoEd?

- Web-based learning system that allows instructors to create specialized learning environments with features such as in managing classes, creating assignments, viewing students' grades and progress within created courses
- Teachers and professors may create 'Instructor' accounts that allows them to modify existing classroom content, as well as in creating new classes that enables the creation of such features
- Students can create 'Student' accounts to join classes and view instructor-made assignments

Problem

Product owner believed that existing educational software does not offer the flexibility of creating instructor-configurable content that suited her needs; i.e., editable quizzing features. The existing product, **DemoEd**, aimed to solve this problem by offering a content creation tab to instructors to seamlessly integrate such features.

Contributors:

- *Product Owner*: Dr. Sat Gavassa
- Franklin Neves – Draggable & Droppable Interactions
- Alisa Chavez & Batiah Sinepha – Multiple Choice
- Shanice Badoo & David Giles II – Interactive Video Elements

The Activity Model

The activity model was designed to be malleable to every type of activity. Through its activity parameters

```
const mongoose : Mongoose | {...} = require('mongoose');
const Schema : = mongoose.Schema;

const activitySchema = new Schema(
  {
    title: { type: String, required: true },
    description: { type: String, required: true },
    activityType: { type: String, required: true },
    activityParams:{
      type: Schema.Types.Mixed,
      required: true
    },
    courseId: {type: Schema.Types.ObjectId, ref: "Course"},
  },
  {
    timestamps: {
      createdAt: 'created_at',
      updatedAt: 'updated_at'
    }
  }
);

const Activity : any = mongoose.model( name: 'Activity', activitySchema);

module.exports = Activity;
```

Created Activities Screen

Through this screen instructors can preview any activity, edit them, and delete them is necessary.

Edit this course

Modules

Add assignments

Add students

View students

View assignments

View grades

Add Instructors

View Instructors

Create Content

Delete this course

Created Activities

Text And Images

Multiple Choice

Drag and Drop

H5P

Other Activities

Created Activities

Title	Description	Activity Type		Delete
Activity Example	Simple description	dragAndDrop	Actions Edit Preview	X

< Back to courses

✕ Cancel

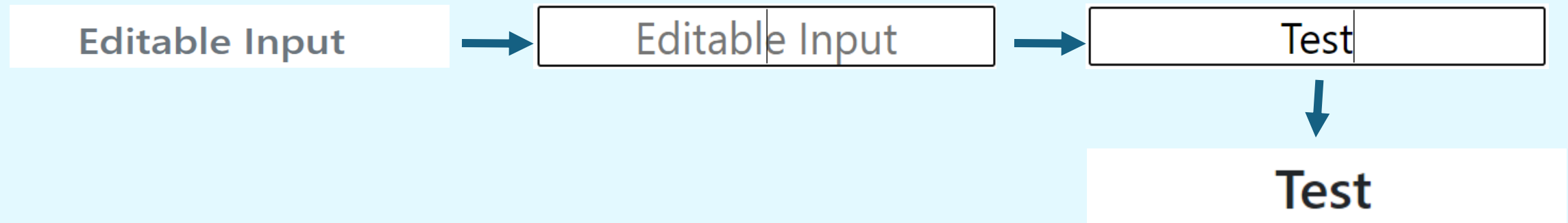
Introduction to Drag and Drop Activity Creation

Editable Input

Toggle Switch

Introduction to Drag and Drop Activity Creation

Editable Input



Toggle Switch



Introduction to Drag and Drop Activity Creation

Preview

Save

Activity Title

Activity Description

+

Container Title -

Ordered Answers: ☒

Extra Answers: ☐

Double click to edit:

New Draggable

Remove Draggable

Introduction to Quiz Creation Feature

- The primary issue addressed by the "**Quiz Creation**" feature is improving the course management system's ability to effectively gauge student learning and offer interactive educational tools. While the system proficiently handles course management and assignments, it did not previously facilitate the creation, management, and grading of online quizzes. This feature resolves this by allowing users to easily create, customize, and implement multiple choice tests within the platform, enhancing the educational experience with immediate feedback and grading, thus supporting better instructional adaptation and student learning analytics.
- **Purpose:** This feature is designed to facilitate assessment capabilities within the educational platform "Biology DemoEd", enabling users to measure their understanding and progress effectively. It allows for a dynamic and flexible testing environment that can cater to various educational needs.

Key Benefits:

- **Engagement:** By incorporating interactive quizzes, the feature promotes greater student engagement and retention of course material.
- **Feedback/Evaluation:** Provides immediate feedback to students, which is crucial for adaptive learning, while giving instructors a clear view of the class's performance.
- **Versatility in Testing:** Supports a variety of question types and settings, allowing instructors and students to tailor assessments based on the course's objectives and user needs, thus enhancing the overall educational experience.

Integration into the Application

- The feature seamlessly integrates with the course management system of the existing educational app, allowing users (instructors/student) to add quizzes directly to their course modules.
- Instructors and students can create assessments tied to specific lectures or modules and can access these quizzes directly from their course dashboard, and the system automatically records their scores for review.

Demonstration of "Quiz Creation" feature

(screenshots for viewing)

Create Multiple Choice Assessment

DEMO QUIZ #1

What is true about frogs?

Frogs drink water through their skin

☒ Correct Answer(s)

Frogs are classified as reptiles

☐ Correct Answer(s)

A group of frogs is called an army

☒ Correct Answer(s)

Frogs have tails

☐ Correct Answer(s)

+ ADD QUESTION Preview

Screenshot taken of a "New" Quiz creation process. Allows users to: Create project title, add questions and options, set the correct answer choice(s), and move on to "preview" their quiz.

Preview: DEMO QUIZ #1

"What is true about frogs?"

☒ Frogs drink water through their skin

☐ Frogs are classified as reptiles

☐ Frogs have tails

☒ A group of frogs is called an army

Begin Quiz

Screenshot taken of the New Quiz creation process in the "PREVIEW" window. Allows the user to preview and edit their quiz contents before officially taking the assessment.

Question 1: What is true about frogs?

☐ Frogs drink water through their skin

☐ Frogs are classified as reptiles

☐ Frogs have tails

☐ A group of frogs is called an army

Submit Quiz

Screenshot taken of the New Quiz creation process in the "Test Taking" window. Allows the user to officially begin taking their created assessment, for grading and feedback.

Quiz Completed!

Your score is 1 out of 1.

Create a New Quiz

Screenshot taken of the New Quiz creation process in the "Quiz Completed" window. Once the user has successfully completed the created assessment their results are displayed and given the option to "Create a New Quiz" once more.

Introduction to Trimmed Video Creation

- The product owner wanted a way for instructors to add a video that can be played from a start time to an end time. This is to provide supplemental information for following questions in the module. Using this feature, instructors can choose any YouTube link to play for their students. The Instructor can then choose the start and end time, when they are entered that time is previewed on the video. When the instructor has finished selecting start and end time, the cropped video is previewed for them.
- **Purpose:** This feature was developed so that an instructor can easily choose start and end times of a video which is provided by them using a YouTube link. This video is then placed in the module between questions for the students using the application to view. The following questions would be answered based on the content of the video.

Key Benefits:

- **Instructional:** Supplemental instruction can be provided using the videos. Some questions may not be clear without further supplemental information, this can be provided with a video that the teacher has chosen to provide.
- **Flexible:** Allowing a teacher to upload any YouTube video to the video creation provides a great degree of flexibility. They can also provide start and end times that they have chosen to have the video only provide the necessary information.
- **Visualization:** Videos can provide clear visual demonstrations of what needs to be done to solve following questions. Visualization of learning material also improves retention.

Demonstration:

The instructor can enter any YouTube Url to load for the video feature.

Please enter the video link you want to use:

If the link is invalid an alert will be displayed, that the link is not a valid YouTube link

localhost:3000

Please enter a valid YouTube video URL

Creation

When the YouTube link is loaded, the duration and current time are displayed. You can then enter a start time and an end time after.



Duration of the video: 3606.00 seconds

Current Time: 0.00 seconds

Set start time:

Start time (seconds)

After the start and end time are chosen, you may enter a title and a description to save the video with. The video is also displayed with the new start and end time.



Duration of the video: 3606.00 seconds

Current Time: 15.58 seconds

Start Time: 15

Stop Time: 45

Title:

Description:

Demonstration:

Viewing



The times and original link are converted to a YouTube embed url with the times. When the student views the video, it is played from the given start time to the given end time. This allows for only the relevant information to be shown.