DESIGNING AND IMPLEMENTING ARGUMENTATION THROUGH DIGITAL PLATFORM: A FRAMEWORK FOR BEGINNING 3RD-6TH SCIENCE EDUCATORS

by

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Project Description

Introduction

This capstone project explored the question: *How can 3rd - 6th grade pre-service and beginning science educators design, implement and evaluate science argumentation through a digital medium?* The purpose of this project is to create a framework for pre-service or beginning 3rd-6th science educators on how to design and implement argumentation online in an equitable manner by choosing their own phenomena. The goal of this downloadable framework, website resource guide, and professional development presentation is to create more equitable opportunities for students within a distance learning classroom through relevant phenomena and student discourse. The project consists of a professional development Google Slide presentation walking educators through the importance of argumentation, how to design lessons on investigative phenomena through online platforms, how to implement it online and how to evaluate it. The presentation is accompanied by a website for users to access the materials and a downloadable framework to begin designing their own argumentative phenomenon lessons.

The presentation begins with an overview of the importance of argumentation and the challenges of why it is not more frequently used by teachers. It then outlines the frameworks and standards that this framework was designed with. This includes the Next Generation Science Standards (NGSS), the National Science Teachers Association (NSTA) and World-Class Instructional Design and Assessment (WIDA). Next, the Presentation identifies phenomena and outlines the scientific argument. Following this is how to identify a platform for students to learn on, choosing a phenomena, identifying claims, evidence, reasoning and platforms for students to

have discussion amongst others. The presentation also talks about equitable practices and how to support multilingual learners and students who receive special education services.

Setting and Audience

The intended audience for my project is beginning 3rd - 6th grade pre-service or beginning science teachers. The reason why I chose this audience is because there are many resources for argumentation at the middle and high school level, but rarely any identified at the elementary. Educators teaching science at these grades may be teaching science in a departmentalized model or not, therefore the extensive training on science will not be as robust as a middle or high school educator. This is a curriculum supplement and is intended to be used at the end of units for approximately four instructional days. The setting for this project is in an urban, lower income school district.

Project Format

The three deliverable mediums I selected for this project are a professional development presentation in the form of google slides, an accompanying framework for educators to use in lesson planning their phenomena and a website which allows educators to frequent the resources.

Link to PD Presentation

Link to Framework

Link to Website

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