Project 3

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Flipped Classroom 3d Printing Exercise

The objectives of the flipped classroom lesson is to teach the students how to use the program, Tinkercad to create a 3d design to be printed from a 3d printer. The Flipped Classroom instructions/activities can be assess from home by use of a computer with Internet access or any mobile device. The students will be able to practice using the software and participate with supplemental activities to master the skills needed to use geometric shapes to create a 3D design.

The next day, the teacher will assign the students to work in groups. The students will collaborate with their classmates to create a 3d design. The students be assigned a specific task for example, a program designers responsibilities are to draw a design using geometric shapes. The engineers will use the program, Tinkercad to create the 3d design. The recorders will document the steps to create the 3d object from the beginning stage to the end. The presenters will orally give a report before an audience how to create a 3d design in order to print a 3d object.

The Flipped Classroom was developed by using multiple technologies. A projector with digital photos backdrop served as a visual to display sample 3D objects. Wacom Intuos pen with tablet in conjunction with the paint program was used as a visual write the objective for the lesson and how the students will be assessed. Tinkercad 3D designed software demonstration introduced the students to programming using geometric shapes. Bergmann and Sams (2013) suggests to have two people do the demonstration lesson to hold viewers’ attention. The students will learn how to use the tools to create a 3D model. The students can access the program by logging onto the Tinkercad website and practice how to maneuver objects. The mini YouTube video was inserted within instruction to show the students how the 3D printer operates.

Activities

The students will be able to log into their Google Drive account and share worksheet documents with their classmates.

Flipped Classroom Link  <http://youtu.be/wkgrLg4qgFE>

Worksheets

http://www.mathworksheets4kids.com/solid-shapes/label-large.png

<http://www.mathworksheets4kids.com/solid-shapes/identify3.pdf>

<http://www.mathworksheets4kids.com/solid-shapes/movements-shapes1.pdf>

http://www.mathworksheets4kids.com/solid-shapes/label-draw2.pdf

REFERENCES

Bergmann, J. & Sams, A. (2012).Flip your classroom: *Reach every student in every class every*

*day.* International Society for Technology in Education.

Time. (2013, January 15.) Make your own products with 3d printing. Retrieved from

https://www.youtube.com/watch?v=D3OfjYlXUCU