Learner Analysis

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JOT2 Task 1

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**Instructional Setting and Content Area**

The setting is in an elementary school in Poinciana, Florida. All of the lessons will take place with a group of 21 fourth graders in the same class. The lessons will be on a math unit with the topic of converting decimals into fractions and fractions into decimals.

**Instructional Problem**

Fourth grade students are required to compare equivalent fractions and decimals. Many students enter the fourth grade without understanding place values of whole numbers. They are taught the place values of decimal numbers in the fourth grade. The students lack of whole number place value fluency causes students to fall behind in comparing fractions to decimal numbers that are equivalent as they do not know what number is in a tens place to transfer the number into the tenths place of a decimal. Students who do not understand the place value locations of numbers will struggle with making a connection between fractions and their equivalent decimal (Thompson, 2015).

**Goal Statement**

As a response to the needs analysis, the instructional goal has been identified as the following: At the end of the unit of instruction, students will match the correct conversions of decimal and fraction numbers. Students will match eight out of ten decimal numbers to their corresponding fraction form by drawing a line from a decimal number to the matching fraction form.

Students need to be able to convert decimals into fractions as the overall goal. However, based off of the needs analysis, students will need to work on place value knowledge in order for students to accomplish this standard. The final assessment, as mentioned in the identified goal, will have numbers in the decimal and fraction form that are able to be matched based off of place value knowledge (0.07 = 7/100), instead of more complex conversions (0.75 = ¾). This will demonstrate that the students understand both place value and converting decimals to fractions (Thompson, 2015).

**Learner Analysis**

**Required Entry-Level Knowledge and Skills**

Students have to be able to identify the place values of whole numbers so that they may transfer that knowledge into the fractional numbers, for example, a student who knows that 70 means 7 tens and 0 ones, they will be able to easily transfer that knowledge onto a fraction of 7/10. With some help at first, the students will know that 7/10 is equal to 7 tens. This will help the students understand decimal place values. The decimal values are more complex as we now add –ths to the end of all values and they are valued in the opposite order with tens being closer to the left and the hundreds on the right side. Not only are the values going in the opposite direction, decimals do not have ones place. Therefore, it is vital that students can identify place values of whole numbers first. Converting decimals into fractions requires this skill of place value knowledge because the numbers in both fractional and decimal must stay in their respective place value to be accurate.

Students also need to be able to apply basic operations to the fractions as they may need to multiply a fraction by 10 or with more advanced conversions, be able to divide the fractions to get an equivalent decimal.

**Prior Knowledge and Skills**

Most of the students are able to fluently add, multiply, divide, and subtract fractional numbers. The students have spent the last 5 weeks learning how to perform basic fractional computations with 82% of the class scoring at least a 70% on the end of unit exam. As the students are able to perform basic operations with fractions, the next step in the fractions standards would be to introduce decimals and fractions sharing value by converting the two. Students have never worked with decimals in math. They have worked on money values as a nickel is 5 cents but do not yet know that 5 cents is 0.05 on a decimal value. They would recognize $0.05 or .05₵ but in isolation or being able to read 0.05 has not been taught to fourth grade students. They have never gone over decimal place values before as decimals are only used in money before the fourth grade.

Most students are able to identify a numbers place value if the number is whole. Students were assessed on this skill during the first two months of the school year, so a few review problems may be needed but all students performed above 80% on the chapter test taken in September. Students also answered on a student survey given this week that they know place values of whole numbers.

**Cultural Differences**

The population of students are 91% Hispanic, 9% African American, and 2% Caucasian. Of the Hispanic students in my classroom one is a non-English speaker, two are limited-English speakers, and the others are fluent in the English language. The Hispanic students have a sense of “present time” which means that these students are usually more relaxed about time guidelines. They typically have short term goals and do not think far about the future. These students are also not usually into competition and like to work in groups (Culture, n.d.).

I will accommodate the student’s cultural differences by limiting the number of assignments or activities that have a competitive feature to them. The activities will include group or partner work that will allow the students to socialize, work cooperatively, and learn from each other. The assignments will have a due date but I will accept late work for full credit to accommodate student’s needs, as I do have to follow the districts learning plan pacing guide of instruction. Students will be allowed to work on assignments they did not finish when they are done early on a different assignment as well.

**Motivations**

There are a few students who raise their hands to answer questions, turn in work consistently, and are excited to learn. However, this is the minority of the students in my classroom. Students think that they are not good at math, many of whom groan when I ask them to take out their pencils and a sheet of paper. The students do not understand why they have to learn today, especially when it is time for math. The students enjoy subjects such as science where many days are labs or videos they can do or watch to help. When I have told the students the importance of their learning and given examples, many students do not trust the information I have given them and still believe that math is not important beyond adding and subtracting whole numbers, therefore these students have a low motivation level to try putting their skills to a performance assessment. They do not yet see the benefits as they are young and do not have to perform math to live an adult life yet.

The students will have the needed accommodations to help them succeed based off of their current motivations. The students will be taught in new fun ways that they have not received yet. As these students do not like to stand out from a crowd or have competitions, learning through projects in which they will need to apply real life applications to will help the students see the benefits of learning in a fun way. The students do enjoy art activities and there has been increased work turned in on time when the assignment asks the students to draw, color, or write on a poster board. Therefore, most assignments will be done in groups or partners and will include a creative element; worksheets from the workbooks and lecture based learning will be kept to a minimum. There will also be an inclusion of the SMART board for lessons to allow for student engagement instead of lectures and note taking.

**Attitudes toward Topic**

Students do not enjoy the math block as much as the other subjects taught (Science, Social Studies, and Language Arts). Students have not yet been introduced to converting decimals and fractions. They have not enjoyed fractions and have the attitude that fractions are more complicated then they need to be: often the students want to solve fraction very quickly to be finished shortly after starting. The students write down fractions as their answers without thinking about the steps they should be taking and get the question marked incorrect. When I have conferenced the students about the steps to add fractions, for example, they were able to do it and write it down if it was the only question asked of them. This tells me that the students know what they are doing but do not enjoy working with numbers that are not whole.

Accommodations will be made by incorporating many smaller problems to solve at a time so that they do not experience fatigue or become bored of this new topic. The students will be given the chance to share their thought processes with their peers to introduce positive math thinking and solving skills, which will mean students will need to work together to solve concepts by talking and sharing ideas. This could help with the problem that they are not good at math and that math is boring.

**Performance Context**

Students will learn how to convert decimals into fractions during the two week unit of instruction. They will perform small activities with a partner or small groups of 3 to 6 (depending on the assignment) and have to participate in whole group lessons. The lectures will be kept to a minimum and allow students to demonstrate their understanding, as well as to gain a level of confidence through repetition and assignments. They will be expected to discuss and ask questions as the unit progresses ways that they can apply their learning in the real world, such as with money and sales from stores (1/2 half a price).

Skills learned from this unit will be applied also to future conversions with fractions not set in base ten and the students will have this standard measured on the end of year exam as well as on the Florida Standardized Assessment.

References

Culture. (n.d.). Retrieved from http://www.coedu.usf.edu/zalaquett/hoy/culture.html

Thompson, S. (2015). *Needs Analysis Report.* Unpublished manuscript, Teachers College,

Western Governor’s University, Salt Lake City, Utah.