Assessment for, as, of Learning to support Differentiated Instruction

Use of choice cards to encourage student voice and empower student engagement and learning
Secondary DI Project Example, 2009

Mathematics Department

Differentiated Instruction Project 2008-2009

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Overview of Project

Our project focused on using colours as a gateway to differentiation. We chose the stoplight colours red, yellow, green because of their intuitive nature. Our team of grade 9 math teachers adopted the following common definitions:

Red – “I really don’t understand this. Could we go over it again?”

Yellow – “I think I understand this but I may still need some help doing it on my own.”

Green – “I understand this and think that I can do it on my own.”

These colours were used as a basis to develop various activities to collect information. Once this information was collected it was used to differentiate instruction based upon the readiness of the students.

What We Learned

- The use of the stoplight colours by all grade 9 teachers provided a common language for all students and set the groundwork for the continuation of this system in other grades.

- It provided students with a tool to self-assess their understanding of concepts

- The system allows for movement from one colour to another on a concept by concept basis, which reduces the pitfalls of labeling students and allows for a feeling of accomplishment.
• Careful planning at the beginning of the course is necessary to establish the framework that will be used for the semester
  – Must be sensitive to comfort level of grade 9 students in regards to publicly displaying their level of understanding.
  – Initial activities kept communication of colours between individual students and the teacher
  – Intermediate step was group communication of colours.
  – Individual, public communication of colours followed.

• Major benefit of using the theme of colours is the adaptability of the theme to varied activities to increase student engagement.

• Intermittent use of the colours throughout a unit, instead of daily, provides stronger, more relevant feedback.

• Differentiation doesn’t have to mean creating three sets of activities as one activity often can be adapted to meet the needs of all students.
  – For example, reds could receive small group support from the teacher, be paired with a green student for a coaching activity, or be provided with a more scaffolded approach to the activity.

Assessment for Learning

• The most beneficial aspect of using the colours is that it focuses on improvement. Students are able to track their own progression of knowledge of the concepts taught in class, and use this knowledge to develop an action plan with the ultimate goal of being successful on summative tasks.

• From a teacher’s standpoint, the use of colours allow for both specific and descriptive feedback and the use of differentiated strategies to increase student success.

Assessment for Learning Activity 1: Colour Coded Formative Quiz

• Description:
  – Students are provided with a short 3-4 question quiz based on previous lesson(s).
  – Once students have completed the quiz, they are asked to use coloured stickers to indicate how they feel about each question.
  – This is also useful to help students clarify/revisit how to self assess in regards to the 3 colours.

• Opportunities for Differentiation
  – Quiz results can be used to create remedial and review activities for summative tasks.
  – Students can be broken into mixed ability groups to take up the quiz.
Assessment for Learning Activity 2: Summative Review

• Description:
  – On the day prior to the in-class review, students are provided with a list of topics covered in the unit and are asked to colour code each topic.
  – On the review day, students with red coded topics will have the ability to work with support on remedial questions.
  – Yellow students will continue practicing with peer support.
  – Green students can work independently or take on a leadership role in supporting yellows.

• Opportunities for Differentiation
  – During review, students may move between colour coded activities based on their level of preparedness for the test. Once level of comprehension is achieved, red students may move to yellow activities.
  – Activities for yellow, red and green groups may include:
    • Choice boards of activities to do during review period.
    • Smartboard activities.
    • Creation of graphic organizers to use for studying purposes.
    • Individualized remedial worksheets
    • One-on-one assistance with the teacher
    • Small group instruction
    • Use of manipulatives (although all students can have access)

Assessment for Learning Activity 3: Red to Green Activity

• Description:
  – Students are provided with an extension question at the end of the unit with a red level response.
  – Students are then asked to fix errors or add information to change it to a yellow or green level response.

• Opportunities for Differentiation
  – Students could answer the question individually and submit to the teacher for formative descriptive assessment.
  – Think-Pair-Share
    • Teacher can create mixed level pairs or groups and students can participate in a think-pair-share activity using chart paper. These responses can then be placed up around the classroom.
  – The teacher may wish to assign pairs/groups with different starting questions.
Entrance Strategies

- Using the colours at the beginning of a class provides a productive starting point for the lesson.
- Through the use of these activities, we are providing a transition between previous knowledge and new content.
- This also allows for the opportunity to close any gaps in student knowledge and understanding.
- These activities are often structured around the concepts covered in the previous lessons’ homework.
- Through the use of the colours, teacher awareness of student readiness is increased allowing for necessary adaptations of the upcoming lesson.
- Provides opportunities for clarification and re-teaching of key concepts if needed.
- Starter activities need to meet the needs of all colours, allowing for reds to get up to speed, yellows to reaffirm knowledge, and greens to extend knowledge.

Entrance Activity 1: Colour Coded Homework

- Description of Activity:
  - Students are given red/yellow/green stickers or markers
  - Students are asked to colour code specific questions from their homework.

- Opportunities for Differentiated Instruction:
  - Students can be grouped according to colour, based on self assessed level of understanding.

- For example;
  - Reds will work in small groups with the teacher, who provides mini lesson of previous topics.
  - Yellows will work in pairs on a question similar to previous nights work.
  - Greens will be provided with an extension question based on previous nights work.
Entrance Activity 2: Starter Question Groupwork

• Description:
  – Students are presented with 1-3 questions/problems based on previous days work.
  – Using exit polls from previous day, students are placed into groups to work through the questions/problems.

• Opportunities for Differentiated Instruction:
  – Mixed colour groups
    • Provide opportunities for coaching activities within the group.
  – Single colour groups
    • Each group is provided with a similar problem
      – Reds – provided with scaffolding needed to help guide problem solving process.
      – Yellows – provided with guiding questions or hints to help guide problem solving process.
      – Greens – develop a solution and justify their choice of strategies.
    • Each group is provided with a problem of varying complexity

Entrance Activity 3: Entrance Polls

• Description:
  – Students are asked at the beginning of lesson to sort homework questions and solutions into the colours onto the smartboard.
  – A smartboard slide is set up so there 3 circles, each one associated with a colour. Question numbers (as infinite cloners) are placed at the bottom of the board.
  – Each student comes up to the board and slides the question numbers into the appropriate coloured circle.
  – See example

  ![Example of Entrance Polls](image)

• Opportunities for Differentiated Instruction:
  – Zip-Around Activity
    • Red coded questions are taken up using the zip-around DI strategy
    • Zip-around strategy allows students who are green with particular questions to share their responses with others.
Strategies for Body of Lesson

- The use of the colour strategy throughout the class, allows the teacher to quickly assess student comprehension of the newly presented material.
- This can allow the teacher to make on-the-fly fine adjustments of concepts.
- These activities allow students opportunities to self assess and provide feedback, while maintaining engagement.
- Many of these activities can vary in length depending on the lesson progression of each individual day.
- At end of activities, teachers continue on with lesson.

Body Activity 1: GYR Cards

- Description:
  - Students are provided with green, yellow, and red cards to keep in their binders.
  - At various times throughout the teacher directed lesson, students are prompted to raise their cards to indicate current level of understanding.

- Opportunities for Differentiated Instruction:
  - Retell-Relate-Reflect Activity with Mixed-Colour groupings
    - Greens – retell or reexplain to the group the concept in their own words.
    - Yellows/Reds – try to relate this to previous lessons
    - All students – reflect on what they still need to know. Full class discussion based on reflections.

Body Activity 2: Colour Cubes

- Description:
  - Students are provided with green, yellow, and red cubes to use throughout lesson.
  - At various times throughout the teacher directed lesson, students are prompted to display their cubes on their desks to indicate current level of understanding.

- Opportunities for Differentiated Instruction:
  - Shadow Solutions
  - Greens are paired up with reds or yellows
  - Pairs of students are provided with a sheet with 2 sample questions.
  - On the first question, the green students dictate to the red/yellow students how to answer the question. The red/yellow students record this information.
  - On second question, the roles are reversed
Body Activity 3: Staggered Questions

- **Description:**
  - Based around providing class with 3 examples of a concept.
  - At the end of each example, teacher asks who is green. Green students are provided with questions to work on that are similar to examples. Students who are red and yellow, stay with teacher for subsequent examples.
  - At the end of each example, more and more students should label themselves as green.

- **Opportunities for Differentiated Instruction:**
  - Activity is inherently DI in application.

Exit Strategies

- Exit activities allow for feedback at the end of the class. This allows the teacher to develop strategies for upcoming lessons.
- This allows students the opportunities to consolidate their learning and reflect on their level of comprehension. From this, students are better able to guide their next steps.

Exit Activity 1: Exit Poll

- **Description:**
  - Using the smartboard, three coloured circles (infinite cloners) are placed on the screen.
  - At the end of the lesson, students will choose a circle based on their level of understanding and drag it into the middle of the screen.
  - See example

- **Opportunities for Differentiation**
  - Based on the colours, the teacher can plan the next day’s starter activity accordingly.
Exit Activity 2: Coloured Cans

• Description:
  – Each student is provided with token with their name on it.
  – The teacher sets up 3 colour coded coffee cans with slotted lids to ensure privacy.
  – At the conclusion of the lesson, students place their token into the can that fits with their self assessment of the days lesson.

• Opportunities for Differentiation
  – Using the information from the coloured cans, the teacher can structure purposeful groupings for the next days activities/lesson.
  – This is also an indicator for student readiness.

Exit Activity 3: Journal Reflections

• Description:
  – Each student is provided with a journal at the start of the course.
  – At the end of the lesson, students are provided with prompts to reflect upon a specific aspect of their learning and understanding.
  – Prompts could include;
    • Something I found red/yellow/green was….
    • Today I found _______ to be yellow. To improve my understanding, I need to………….
    • I think that this is an important concept to be green for because……..

• Opportunities for Differentiation
  – Using the information from the journal entries, the teacher can structure purposeful groupings for the next days activities/lesson.
  – This is also an indicator for student readiness.