**Two Classroom Dialogues : Excerpt 1**

**Excerpt 1: The Brownie Problem**

Students in Ms. Carter’s class were exploring the concept of equivalent fractions. The specific problem follows:

*The problem:* I invited 8 people to a party (including me). My mother got home with 9 brownies. How much did each person get if everyone got a fair share?

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| Sarah:  | The first four, we cut them in half. [Jasmine divides squares in half on an overhead transparency. See figure below.] |

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|   |  |  |  |  |  |  |  | Ms. Carter: | Now as you explain, could you explain why you did it in half? |
|  |  |  |  |  |  |  |  | Sarah: | Because when you put it in half it becomes ... eight halves. |
|  |  |  |  |  |  |  |  | Ms. Carter: | Eight halves. What does that mean if there are eight halves? |
|  |  |  |  |  |  |  |  | Sarah: | Each person gets half |

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| Ms. Carter: | Okay, that each person gets a half. [Jasmine labels halves 1-8 for each of the eight people.] |
| Sarah: | Then there were five boxes [brownies] left. We put them in eighths. |
| Ms. Carter: | Okay, so they divided them into eighths. Could you tell us why you chose eighths? |
| Sarah: | It's easiest. Because then everyone will get ... each person will get a half and [whispers to Jasmine] How many eighths? |
| Jasmine: | [Quietly to Sarah] 5/8. |
| Ms. Carter: | I didn't know why you did it in eighths. That's the reason. Ijust wanted to know why you chose eighths. |
| Jasmine: | We did eighths because then if we did eighths, each person would get each eighth, I mean 1/8 out of each brownie. |

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| Ms. Carter: | Okay, 1/8 out of each brownie. Can you just, you don't have to number, but just show us what you mean by that? I heard the words, but ... [Jasmine shades in 1/8 of each of the five brownies not divided in half.] |
| Jasmine: | Person one would get this ... [Points to one eighth.] |
| Ms. Carter: | Oh, out of each brownie. |
| Sarah: | Out of each brownie, one person will get 1/8. |
| Ms. Carter: | 1/8. Okay. So how much then did they get if they got their fair share? |
| Jasmine/Sarah: | They got a 1/2 and 5/8. |
| Ms. Carter: | Do you want to write that down at the top, so I can see what you did? [Jasmine writes ½ + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 at the top of the overhead projector. |

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 *The dialogue continues…*

From Kazemi, E. (1998). Discourse that promotes conceptual understanding. *Teaching Children Mathematics, 4*(7), 410-414.

**Two Classroom Dialogues : Excerpt 2**

**Excerpt 2: Fractions and Factors** (from Truxaw, 2004)

Ms. Reardon is reviewing for a test with her seventh grade class.

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| Ms. Reardon: | We’re asked to rewrite 12 twenty-firsts in simple form. What do they mean? Don’t give me an answer yet. But what do they mean by rewriting in simple form? |
| Steven: | Turn it into the lowest fraction possible that equals the 12 twenty-firsts. |
| Ms. Reardon: | Right. So, what is really getting smaller, not the fraction, but the…? |
| Class: | Number |
| Ms. Reardon: | The numbers themselves. I’m going to do something on a sidetrack for the moment. Can you guys list the factors of 12 for me? *[T. writes on board as she speaks].* Factors of 12. Give me one pair. Lucas. |
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| Lucas: | 1 and 12 |
| Ms. Reardon: | 1 and 12. And I like to list them as pairs. I find it easier, so I don’t leave anything out. *[Lists on board]*  |
| Sheila: | 6 and 2 |
| Ms. Reardon: | 6 and 2 *[Lists on board.]* |
| Roberto: | 3 and 4 |
| Ms. Reardon: | *[T. lists on board].* Any others? *[pauses for 5 seconds].*  |
| Ms. Reardon: | Do you guys agree with this?  |
| Class: | Yeah.  |
| Ms. Reardon: | Any more? |
| Class: | No. |
| Ms. Reardon: | I’d like you to do the same thing for 21. |
| Student: | 1 & 21 *[almost inaudible]* |
| Ms. Reardon: | Uu- uh *[indicating for S to stop speaking]*… thank you. Hands… Garth. |
| Garth: | 3 and 7 |
| Ms. Reardon: | Okay *[writes on board]* |
| Joseph: | Um, 1 and 21 |
| Ms. Reardon: | 1 and 21. Okay. Any others? *[pauses]* |

*The verbal exchanges continue similarly, finding the common factors of 21. Then…*

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| Ms. Reardon: | Now I want to know…common factors…hmmm…what do I mean by common? Amanda? |
| Amanda: | You see them more than once. |
| Ms. Reardon | Yes. We have it once here and once here. I’m going to circle and then write it over here *[as a separate list]*. Somebody tell me one number that appears in both lists. |
| Taylor: | One. |
| Ms. Reardon: | Breanna? |
| Breanna: | Three |
| Ms. Reardon: | *[pauses, circling the common factors]* No more?  |
| Class: | *[No response.]* |
| Ms. Reardon: | Good. Okay. Put the extra comma in, in here. Now, I want the greatest…common factor *[writes on board]* Sometimes abbreviated GCF. Greatest common factor. Everybody! |

*The dialogue continues…*

From Truxaw, M. P., & DeFranco, T. C. (2008). Mapping mathematics classroom discourse and its implications for models of teaching. *Journal for Research in Mathematics Education*, *39*, 489-525.