Getting the Correct Answer

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Abstract

This paper investigates the question: What does it mean to experience correctness in school mathematics? Drawing on interviews and observations of classroom interaction, the author describes possible experiences of students when they get an answer, when they cannot get the correct answer, and when they get the right answer but do not understand how they got it. Questions surrounding student perseverance in getting the correct answer and the relationship between power and the possession of a correct answer are considered. Emerging issues of schools as correctional institutions, teachers and textbooks as sole authorities, and mathematical truth and rightness as absolutes are discussed. Through a phenomenological consideration of the embodied experiences of students, the author challenges the prevalent preoccupation with correctness and offers an alternative pedagogy that is informed by a sense of ethics rather than correctness. As students begin to view correctness as embedded in incorrectness, maybe their experiences of ambiguity and uncertainty can be welcomed. Perhaps school mathematics can embrace human experiences.

Arithmetic is where
the answer is right and
everything is nice and
you can look out of the window and
see the blue sky –
or
the answer is wrong and
you have to start all over and
try again and
see how it comes out this time.
(Sandburg, 1993)

I sit up straight on the edge of my seat, leaning forward. I stretch for the ceiling, hand extended, waving, trying to get the attention of my teacher. “Pick me, pick me!” I can feel my heart pumping. My eyes stay glued to the teacher. I’ve been practicing my multiplication tables and I know that I have the correct answer. I am confident that I am right because I checked it on the calculator. When I respond to the teacher, she smiles and says, “Good answer.” I smile back. (Grade 6 student)

Our quest for getting the correct answer tends to dominate our experiences of school mathematics. When we get the right answer, we can experience a rightness. Our answers are good. We are in good standing with the teacher. When we mark our answers collectively as a class, we say we are correcting our work. We make corrections and we give correct answers. What is this notion of correctness?

Derived from the Latin word *corrigere*, correctness involves making things straight and upright. Something is said to be correct if it conforms to an acknowledged rule or to what is considered right, if it is free from error, or if it is accurate, true, or exact (*OED*, 1989). Traditionally, what is true in mathematics is absolutely right or correct. Truth in this sense is something that agrees with a standard, pattern, or rule. A mathematical truth is exact, accurate, precise, correct, and right. When we speak about a right answer in mathematics, we mean that the answer is correct or proper. We find the right way, we get something right, and we make things right. These meanings of rightness, truth, and correctness share the root *rigere*, which means to make or lead straight, to direct or rule (*OED*). In school mathematics, the terms true, right, and correct are often interchanged and are clearly intertwined.

Correctness is especially evident in elementary school mathematics where the teacher directs and makes us straight. Computational accuracy and exactness are emphasized and digits are correctly straightened and lined up in columns as we add, subtract, multiply, and divide. Indeed, if we do not line up the digits correctly, our answers will not be right. Our procedures for performing computations insist on straightness and uprightness. Getting the correct answer is ruled by fixed ideas resulting in predictable outcomes. If we follow the correct steps, we will reach the one and only answer. Getting *the* correct answer is emphasized and often getting *an* answer is not desirable.

Our students often view mathematics as black or white where answers are either wrong or right. Being right implies knowing the rule or the correct procedure. Correctness rules. What do we experience when we cannot get the correct answer or we get the right answer but do not understand how we got it? What happens when we are convinced we are correct and then discover we are in error? What if there are many answers? What if there is no correct answer? What does it mean to experience correctness in school mathematics?

Answering the Question

Huddled over my desk, I've been working on this mathematics problem for several hours. My hand is cramped, my back aches, and my body feels permanently bent. I cannot solve the problem. I can draw a picture and count. But my formula won't work. I stretch briefly and return to the question. I rewrite the table of patterned numbers. I try a larger number. My diagram and the formula don't match. Finally I find my mistake. I feel relief. My shoulders relax and my jaw unclenches. I got it! (Graduate student)

There may be tension when we are not getting the right answer. Our bodies become scrunched and fixed in position as we concentrate on our efforts. When the answer is wrong, we huddle over our work as we start all over. Our mistakes return us to the beginning. We turn inward, ignoring our surroundings and the crookedness of our body. We will see how the answer comes out and will be satisfied only when it is correct. When we correct our mistakes then we will be straightened out.

“We’re doing it like this. We did that, then that. No, Anthony, wait. We were doing it like this.” My friend Gerald thinks we’ve messed up on step 10. I think it was step 11 where we screwed up. Gerald agrees, then suggests that we might have screwed up earlier. I’m puzzled but soon find the place where we messed up. Suddenly the teacher interrupts. “You’re not there yet.” Gerald asks for the answer but the teacher repeats, “You’re not there yet.” Finally I see what the teacher means. I know what is wrong about our answer. I get it now. Gerald asks, “Are we done?” (Grade 4 students)

Anthony and Gerald struggle to find the place where they have made an error. By looking at each step, they hope to identify the incorrectness of their work. They describe themselves as screwing up. Do they move in a twisted manner? They have blundered and made a mess of the answer. But these students might also say that they have been screwed up by the question, that they have been cheated, deceived, and confused.

Anthony is searching to find his error. Unlike Gerald, his way of thinking is corrected. When we have overcome our errors, we sometimes say that we stand corrected. This change in correctness results in an upright stance. The phrase is a personal declaration and comes out of our realization that we know the error of our ways. We do not exclaim, “He stands corrected.” Somehow it is more desirable to have a personal admission of the offense, like a confession to a crime.

When we get the correct answer, we often experience relief. We reconnect to our body and relax. As stated in the opening poem, we can see the blue sky and our senses are stimulated by remembrances of warmth, fragrances, melodies, and tastes of life. We get it. And according to Sandburg (1993), everything is nice. Everything is pleasing, good, and correct. But not getting the correct answer can be worrisome, dreadful, and unpleasant. A student expresses her memories of elementary school mathematics:

Long division! The blackboard has the following chalked onto it:
273057. Please, please don’t let her call me up to do this! I shut my eyes, lower my head, slither down, down into the desk, but does that help? No! “Marilyn, why don’t you come up and show us the answer.” I try to straighten my body but my shoulders remain slumped as I stumble to the board. Where do I begin? How do I begin? My heart is no longer beating, the blood is draining to my feet. I really, really hate doing math. (Graduate student)

This student describes her heart as stopping as her blood drains to the floor. Sometimes when we cannot get the answer, we lower our heads and we slither

down. Our bodies respond and we become diminished. Marilyn closes her eyes and lowers her face. She seems embarrassed. Is she experiencing herself as someone else sees her? Is this an experience of herself as an object for the other (van Manen, 1997, p. 25)? Has she lost face? Or is she invisible?

Our bodies often become slumped and lowered when we are incorrect. We are unable to straighten our bodies. How different this is from students who are confident they know the correct answer. Our experiences of getting the correct answer can be connected to notions of straightness and uprightness. Students who are right stand straight because they know they are correct. It is not an effort for them. Our experiences of correctness are embodied. Even the language we use to describe our experiences of correctness are linked to our body. Unfortunately, not all experiences of correctness leave us standing.

Getting It

Is this right? Is this the way it goes? Nearly but no, no, no. I've tried to make the black triangle touch the other one. I've tried to move it up and around. This thing is driving me nuts. I take the other triangle and flip it around. Then I turn it. Is this right? What is going on here? I still can't get it. I have to do it again. But that is not right either. I wonder what movements I haven't done. I keep trying. (Grade 5 student)

Sometimes getting the correct answer is not straightforward and is thwarted by questions that are confusing, tricky, and complicated. We might wonder about the process of getting an answer as our students struggle with school mathematics. They lament: We do not get it! Sometimes what they mean is that they tried to get the correct answer and failed. Is there a difference between getting the correct answer and trying to get the correct answer?

Schmidt (2002) suggests that implicit in the idea of trying is the idea of "not." When we say that we tried to get the correct answer, we admit that we have fallen short. We have not succeeded. She proposes that trying is always reflexive, but it seems our mathematics students sometimes recognize that they are trying *as* they are doing and being. Because getting the answer is so evident, some students know when they are trying and failing. Getting the correct answer involves trying harder and being more persistent. Often getting the correct answer is elusive and students spend much of their efforts trying. Does getting the right answer become obsessive in some ways?

In describing a world that demands correctness for persons with obsessive compulsive disorder, Haase (2002) compares doing a mathematics problem to getting something just right.

You read the problem but you don't understand it, so you read it again. You read it again, you read it several times, and finally the light switch in your brain clicks and you go, "Oh, I understand that now." You think to yourself, "Why didn't I get that the first time?" (p. 81)

For persons with obsessive compulsive disorder, there is a feeling for something to be just right, a feeling of understanding in the mind. It is not an embodied feeling of the heart or gut. When they finally feel in their minds that the action is correct, they can stop. Perhaps in some sense our demands for correctness can become obsessive. Is there a place where the quest for correctness in mathematics becomes a disorder?

Sometimes when students say they do not get it, they mean they are not willing to try. They have given up on making the attempt. To get the correct answer we need to avoid error. We can save face by preventing ourselves from being wrong. Sometimes we can avoid the question and then our answers do not appear wrong. There is no personal risk in being wrong because we have not tried. What then compels us to keep trying to get the correct answer? What is it that we want to get?

Possessing the Answer

To get means to obtain or gain possession of something. When we say we get it, we may mean that we possess the correct answer; we possess knowledge. Why would this be desirable? Originally, an answer was a reply made to a legal charge (*OED*, 1989). This reply sought to clear oneself of judgment. People who had good answers would be excused from punishment. Possessing a correct answer would guarantee a good defense. Possessing an answer helped garner power.

How are power and the possession of an answer connected? We use powers of reason to possess an answer. Walkerdine (1988) questions the power and mastery of reason. She challenges the rational dream of perfect control in a perfectly correct and rational universe.

My central point, therefore, is that this so-called natural process of mastery entails considerable and complex suppression. That suppression is both painful and extremely powerful. That power is pleasurable. It is the power of the triumph of reason over emotion, the fictional power over the practices of everyday life. . . . The ‘reasonable person,’ in Piaget’s terms, is ‘in love with ideas’ not bodies. (p. 186)

The power of mastery is desirable because it apparently offers authority over ourselves, authority over others, and control of events. After observing two children solve an addition question, Walkerdine (1988) comments, “Michael and Tony appear to derive considerable pleasure from the power of the methods they are using. Indeed, Michael’s pleasure becomes apparently a desire to display his method and his powers by explaining, both to the teacher and to Tony, his ‘easy way’” (p. 195). To master mathematics, one must possess the answer. Sometimes this is described as possessing a mathematical truth.

In our attempts to get the correct answer, we assume that there is a right answer to get. Our attempts to find the correct answer mirror our preoccupation with finding mathematical truth and rightness. The notion of absolutism suggests that it is possible to gain absolute truth. Classroom absolutism occurs when errors

are treated as absolute; mistakes are absolutely wrong and must be corrected (Alrø & Skovsmose, 2002). Typically, the teacher judges the correctness of the answer. If the answer is right, the student escapes punishment. Hence, the student strives to please the teacher. Possessing the answer is rewarded, the mathematics is mastered, and power is gained. Is correctness determined primarily by what the teacher or textbook states? How do these experiences interfere with the learning of mathematics?

Often the answer is a closely guarded secret where children shield their work from prying eyes by covering it with their arms and turning their backs to their classmates. The friends that possess the answers are not willing to share. They do not want their answers to be stolen. If a classmate copies their work, they give up possession of a precious secret. They give up power. To avoid judgment and to regain power, they are compelled to pursue the project of getting the correct answer.

Figuring It Out

I erase my work. I can't get this answer. I feel so frustrated that I vigorously rub the paper. "Oh no!" I think as I tear through the page. Finding some tape, I carefully conceal the hole. I grab a scrap piece of paper and continue to work. Finally I have figured it out. I deliberately copy my answer onto the paper, taking care to transfer my numbers correctly. (Grade 4 student)

In school mathematics, a girl records her work in pencil so she can correct her mistakes. The imperfection of her work is erased. She will get partial marks for presenting the correct steps for trying to reach the correct answer but full marks are awarded exclusively when she gets the correct answer. No errors are tolerated. Persistence in following the quest for correctness is rewarded. Students are encouraged to figure it out.

This question is really hard. My picture is not right. I have it upside down and I turn it to make it right. The teacher says, "I'm not going to say it's not right. You can figure it out. What's this?" I reply that I don't know. The book is probably using different shapes. My teacher points to another question. "Did you get this one?" I can't figure it out. I don't know. I have to try to figure out if it goes this way or that way. Finally the teacher tells me it was meant to be a fish. I see it. There's the head, there are the fins. But does that look proper? (Grade 5 student)

When students get an incorrect answer, we often command them to figure it out. What does this mean? Are we asking them to solve the problem by working out the sum using figures or numbers? Are we asking them to manipulate figures or shapes until they get it right?

Figures are symbolic representations of mental mathematical concepts. The Latin word, *veritas*, describes correctness as true and free from error. Heidegger (1998) suggests that this absolute idea of correctness emphasizes certainty and sureness. It depends on mental reasoning and is a quality of the mind. It is without space and ground. The correctness of reason is found in *ratio*, the Latin

word for counting, calculating, and calculus. When we ask students to figure it out, we are asking them to work symbolically and mentally. Implicitly or explicitly, we are eliminating embodied experiences as students figure out the correct answer.

Correcting Errors

When we are cutting foods such as fresh bread or cheese, we often say that we make correction slices. This brings the food into alignment, making subsequent slices true and right. When we are writing, we sometimes use correction fluid to cover our mistakes. During house construction projects, we use a correction line to ensure that our walls are true and straight. Often when we speak of correction, we send the message that errors are bad. Frequently when we seek the correct answer in mathematics, we ensure correction is given. But are all errors bad? Indeed, if we learn from our errors, perhaps we should embrace them. Ongoing correction is acceptable in many instances in our daily life but in mathematics, we must be correct from the very beginning.

The importance of getting the correct answer is imposed by the traditional discipline of mathematics and reflected in our educational institutions. In subjects other than mathematics this is emphasized. How are these experiences of correctness different? In language arts, students must learn the rules of spelling and grammar. Yet, language arts classes also include opportunities for creative writing and interpretive reading. In these instances, the focus on getting the correct answer shifts to include multiple meanings. Voicing an opinion in social studies class is not based on an assumption of right and wrong answers but on justification and reasoning. School science classes acknowledge partially correct answers and experiment with physical demonstrations of these answers in an effort to refine or disprove them. In most school subjects, ambiguity is allowed and embraced. Not so with school mathematics. What would we experience if interpretation, justification, reasoning, ambiguity, and creativity were a significant part of school mathematics?

In school mathematics, the fundamental structure of arithmetic demands correctness. We have measurements of the standard error, of random error, and of probable error to account for differences between determined calculations and observations. Our systems of numbers depend on rules and operating in these systems requires that we follow these rules. When rules are broken, students are punished by repetitive practice through exercise. They are in error. They need correction.

In many ways, our mathematics classrooms resemble correctional institutions. The similarity between prisons and schools is explicated by Foucault (1977). In his description of corporal punishment in the 17th century, a student was forced to learn and given penance when he did not measure up to the rule. Defects were corrected by a system of rewards and punishments. The task of teachers was to produce docile and capable bodies. Strict discipline produced correctness. Remnants of the schools he writes about are still visible. We have straightened our lessons to conform to the procedures of mathematics. Textbooks

and teachers have become the authorities in our classrooms. The textbook has become the law and the teacher is seen as the judge.

Some students wonder if the instructor could post the answers to mathematics problems that are not in the back of the book. These students would find it helpful to know if they are getting the correct answer while studying for the quiz. Other students know for certain that they have the correct answers because they have followed the correct steps in an algorithm and have checked their answers using a calculator. The authority for correctness appears to be an external agent.

Sometimes it appears that the authority for correctness is becoming internalized. The expression “It is correct” is exchanged for “I am correct.” The connection between mathematical correctness and self is explored by Lewis Carroll’s (1983) character of Alice. After falling down the rabbit hole and experiencing tremendous growth, Alice is not sure who she is. She compares herself to several of her friends to see if she has become one of them. In order to prove her identity, she begins to recite all the things she used to know: “Let me see: four times five is twelve, and four times six is thirteen, and four times seven is—oh dear! I shall never get to twenty at that rate!... No that’s all wrong, I’m certain! I must have been changed for Mabel!” (p. 26). Interestingly, Carroll chooses arithmetic to demonstrate Alice’s identity crisis. Not getting the correct answer is a foreign experience for Alice, hence, she must not be herself. It is not correct, therefore I am not correct.

The significance of correctness in mathematics impacts one’s sense of self. The satisfaction of getting a correct answer can increase confidence and subsequent success in mathematics. Students learn confidence when they learn about themselves. A recent high school graduate shares her experience:

I think I’m going to fail. I don’t think I have a chance. I feel unprepared. I need 51 correct answers to pass this final exam in mathematics. My stomach hurts and I watch anxiously as my teacher marks my exam. One right, two wrong. Two right, three wrong. She continues as I count. One more X and I fail, one more correct answer and I pass. I cannot move. I’m glued to the spot. I hold my breath as I watch her write two more check marks. I have 51! I have it right on the dot! I have passed! I do not have to retake my math exam or the whole math course. I have actually passed! I am greatly relieved and tears emerge. I have 51 correct answers. Maybe I can do math! (Undergraduate student)

The expression, it is correct, does not have a subject. Where does authority for its correctness lie? When people shift from regarding the answer as correct to identifying themselves as correct, is there a change in authority? If we look closely at the above descriptions, it appears that the self remains validated by outside authority. Does correctness rely on external authority?

In this environment of correctness, students’ attention is continually drawn to the incorrect. How do we experience this authority when we are wrong? What do we experience when we cannot get the correct answer? What is our experience of incorrectness really like?

Experiencing the False

I'm ready to correct my homework. I have an answer for every question and it only took me 30 minutes to finish them last night. As the teacher gives each answer, I become dismayed. Every single answer is wrong! Tears sting my eyes. How can this be? I thought I knew how to do this. I cover my scribbler with my arms and put my head down. I don't get this. (Grade 5 student)

Getting the correct answer is essentially connected to our experiences of the false. By investigating the experience of the false, we can better grasp the essence of correctness. What happens when we are completely convinced our answer is correct when it is mistaken? This student approaches the mathematics class with confidence. Quickly this is replaced with despair. This experience seems to do grave damage as he gives up and the desire to get the correct answer dies.

This student's failure to understand the mathematics is lost in his teacher's pursuit of correctness. His relationship with his teacher is based on a hierarchy of command and authority. The teacher is directing from above as an upright superior. The student does not understand the error of his ways and needs to be straightened up. This student is experiencing his faults as the false.

What do we mean when we say we experience the false? When something is false, it can mean that it is purposefully untrue. This is found in instances of false witnesses, false promises, false eyelashes, and false bottoms. Here the false is deceiving. When we look for the trick when solving a mathematics problem, we experience the false as purposefully untrue. Similarly, false can mean a purposeful imitation of the true. This relates to how we experience mathematical objects or figures as a representation of the true or real.

Perhaps something is false when it is believed to be correct but found to be untrue. In this case, we speak of false alarms. There is a sense of this in school mathematics as we experience false starts and false ideas. Some students seem confident that their incorrectness is correct. Most students experience the false as wrong. Here, falsity refers to error and incorrectness. Our students are expected to overcome this myriad of experiences of the false. It is no wonder that some students hate mathematics.

When students are wrong, they may experience their bodies as sliding ("slithering") down. When we are incorrect, do we experience a downfall? Heidegger (1998) connects falsity to incorrectness. He proposes that the Latin word for false, *falsum*, means to fall, overthrow, bring to a downfall, make totter, and deceive. Heidegger argues that the Romans believed that falsity could be conquered by obedience to rules and commandments in order to be in the right. Power could be established by overcoming the treachery and deception of *falsum*.

Investigating experiences of correctness in terms of *falsum* and *veritas* seems helpful. But what happens when the authority for correctness becomes something other than the mathematical procedures and rules? What might other interpretations of correctness have to offer?

I have been working for 10 hours on this problem. I have an answer but I found it by randomly placing numbers in the boxes until they worked. I knew that if I kept trying, I would get the correct answer. But somehow I am not satisfied. The answer is not enough. I want to know why this works. What is an easier way for getting the correct answer? What is the pattern? I don't want the professor to tell me. It seems important that I get it myself. This may take me a few more weeks. (Undergraduate student)

This notion of correctness appears different from that of *veritas*. When this student gets the correct answer she is not content to stop. Somehow she has crossed the line and is looking for answers beyond the rule. There is a sense of intense curiosity, of personal engagement. Noddings (1998) writes, "When students are forced to plod through material with which they are not really engaged for some obscure future end, they lose interest in the material and confidence in themselves. They settle for giving answers and getting approval from their teachers" (pp. 30-31). This student seems to move beyond what is mathematically evident to her to what is concealed from her. A multihued uncertainty appears to replace the duality of a black and white, wrong and right answer.

The famous mathematician, Gauss, commented, "I have got my result but I do not know yet how to get it" (Kline, 1973, p. 48). Is this how correctness is experienced? Does correctness include ambiguity and uncertainty? Students often comment, "I get it!" Having the answer marked right and understanding how or why the mathematics is right seem to be different. Are these experiences of correctness? Is understanding the mathematics more correct than getting the right answer? What happens when there is no correct answer?

Is Getting the Correct Answer Right?

"She wouldn't give us an impossible problem," Lisa reminds me. Oh yeah, right. But we've been trying so many ways and erasing it over and over again. And I don't know if it's possible because I don't think there are enough bridges. If there was one more bridge right here, it would be possible. Maybe they should just build another bridge for the parade. Or tear one down. They should be able to cross a bridge twice because the people could line up on one end and line up on the other. "Yeah, why can't they?" asks Lisa. But is that what the teacher wants us to do? (Grade 5 students)

When these students encounter a seemingly impossible problem, they depend on the teacher's authority to mediate their confusion and frustration. Implicit in this experience is the notion that there must be one correct answer and that they must figure out what the teacher wants. However, after working without teacher intervention, these students return to the problem to consider why it is impossible. They play with the placement of bridges and begin to explore circumstances that create a circuit. Students have mathematical insights as they recognize patterns, form generalizations, communicate their ideas, and invent

mathematical notation. Creativity and imagination are evident in their actions and comments. The quest for getting the correct answer seems to have been forgotten. Is there a shift in their understanding of correctness?

Heidegger (1998) presents an alternative notion of correctness as unconcealedness, inherent in the ancient Greek notion of *aletheia*. The false is not viewed as *falsum* but is an integral part of *aletheia*. In this sense, false means hidden or concealed. Truth and falsity are not separate from each other in essence. He writes, "If unconcealedness gives the essence of truth its character, then we must attempt to understand falsity as a concealment" (p. 20).

When we consider falsity as concealment, it becomes apparent that the essence of correctness is connected to the essence of incorrectness. In fact, the very word concealedness is embedded in unconcealedness. This may explain our embodied reaction when we are incorrect. Often when we feel incorrect, we sink into the desk. We try to become concealed and invisible. We do not seek the teacher's attention but attempt to withdraw. We want to be hidden. We hide our face and close our eyes. Heidegger (1998) writes, "The being sinks away into concealment in such a manner that with this concealment of the being I remain concealed from myself" (p. 24).

How is getting the correct answer impacted by the Greek notion of the true? If truth is unconcealed, then errors should be viewed as contributing to this revelation. Our attitude towards errors should shift from one of negativity to one of embracement. Our sense of correctness should never be sure or certain. Correctness is continually unfolding and dynamic.

In many of our mathematics classrooms, students experience bureaucratic absolutism. Bureaucratic absolutism is characterized by the teacher drawing on "unlimited resources for stating in absolute terms what is right and what is wrong" and by the "difficulty of getting in contact with the 'real' authority" (Alrø & Skovsmose, 2002, p. 26). Bureaucratic absolutism perpetuates the necessity for getting the correct answer. When we solely teach children to master the techniques or skills of mathematics, we teach them to be bureaucrats. Do we merely want calculating children?

Davis (1996) argues that mathematics becomes an inhumanity when we ignore human experiences: "It is thus that we have created a system that values compliance over creativity, that spawns destructive behavior by destroying our experience, and that conditions learners to reach for the formulaic ahead of the imaginative" (p. 281). Students can set aside their preoccupation with getting the correct answer, they can pose creative alternatives for a seemingly impossible problem, and they can engage in embodied learning. The relationships they have with their teacher, with the mathematics, and with each other can be different. No longer must the students and teacher communicate through quizzing, explaining the right algorithm, and correcting mistakes (Alrø & Skovsmose, 2002); rather, they can move from certainty to curiosity. Their relationships can become more symmetrical and less concerned with authority, power, and correction. Mathematics can embrace human experiences.

Van Manen (1997) presents two pedagogically important questions: "What is this situation or action like for the child?" and "What is good and what is not

good for this child?" (p. 145). As teachers, we ask if we have done the ethically right thing and our pedagogy is continually informed by a sense of ethics rather than correctness. Why is it that we insist on mathematical correctness when the children's experience of this is not always positive?

How does the experience of getting the correct answer shape our view of mathematics and ultimately our view of ourselves? What would it mean if we were to take the Greek notion of *aletheia* more seriously? Would we still be asking, "Is this correct?"

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Note

This study is a phenomenological inquiry (van Manen, 1997) into possible experiences of getting the correct answer in mathematics. As such, empirical generalizations are neither presented nor intended and the evocative use of the personal pronouns "we" and "our" aim to give the reader a sense of resonance. Interviews, written descriptions of experiences, close observations of children working on mathematical problems, and experiential descriptions in literature were used to gather narrative meanings of this experience. Emerging themes were identified and anecdotes, common rhetorical devices of phenomenological writing, were constructed from the original material. Quotations within each anecdote represent the exact words of the participant.

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