UNDERSTANDING THE STUDENT GUIDE AND THE ROLE OF AFFECT IN THE TEACHING-LEARNING PROCESS

TEACHING TIPS

AIMS AND SUGGESTIONS

Unit 0•1: The Guide

Rationale for the Guide. A key aim of this unit is helping readers understand the rationale of the Student Guide. We have found that many adult students welcome the opportunity to discuss the issue of whether or not teaching can be considered a profession (on a par with doctoring or lawyering) and what is required to be professional.

Because so many adult students have little or no understanding of fraction division such as \( \frac{1}{2} \div \frac{1}{8} = 4 \), it makes a particularly good example of why it is important for teachers to understand the mathematics and children they teach and to be familiar with latest developments in pedagogy. For example, asking students why they invert and multiply and why the answer of \( \frac{1}{2} \div \frac{1}{8} \) is larger than the dividend \( \frac{1}{2} \) typically is met with silence. This underscores that those taught by the skills approach may know how to do arithmetic but understand little about it. Asking why children often respond \( \frac{1}{4} \) to \( \frac{1}{2} \div \frac{1}{8} \) can prompt a discussion about their systematic errors and the consequences of instruction that focuses on rote memorization.

Features of the Guide. Another aim of Unit 0•1 is introducing readers to the feature of the Student Guide, particularly its unusual features (e.g., the reader inquiries). In our experience, adult students typically become accustomed to its features (e.g., the chapter-by-chapter pagination) quickly and so little needs to be said about them. You can address particular questions as they arise. However, you may wish to outline how you want to handle the reader inquiries. Some instructors may wish to have students work on selected reader inquiries in class and to have them either complete, do portions of, or skim all or some of the others when they read the chapter. Other instructors may not wish to use reader inquiries as a basis of classroom instruction but may want students to work through, or at least to reflect on, selected inquiries or selected portions of inquiries for homework or journal assignments. In brief, there are a variety of ways the reader inquiries can be used, and it would probably help students to clarify your expectations regarding this aspect of the Student Guide.

Unit 0•2: Affect

The Effects of Cultural and Classroom Climate on Student Affect. Because many adult students may have a negative disposition towards learning and teaching mathematics, it is important to address immediately such issues as: Why do so many people dislike or even fear mathematics? We have found that many students find it reassuring to learn that a “lack” of mathematical proficiency is typically the result of poor instruction, not innate inability. **Probe 0.1: Your Mathematical Frame of Mind** (pages 0-10 to 0-13 of the Student Guide) can provide a basis for addressing these issues.

Math Anxiety. Elementary education majors are uncommonly likely to suffer from math anxiety (Hembree, 1990). Some instructors may wish to tackle this issue directly and immediately. Discussing **Probe 0.2: The Anxiety Model** (on pages 0-19 and 0-20 of the Student Guide) on the first day of class can help students understand the source of math anxiety and how to control it. Alternatively, an instructor can familiarize students with the Anxiety Model by assigning for homework Unit 0•2 in the Student Guide and relevant questions on pages 5 to 8 of this guide. Moreover, whenever the opportunity avails itself (e.g., when a student indicates that he or she is afraid to try a problem or terrified by an exam), an instructor can remind the class that a source of math anxiety is unreasonable beliefs and that we must put things in perspective by replacing unreasonable beliefs with reasonable ones.
SAMPLE LESSON PLANS

Project-Based Approach

The SUGGESTED ACTIVITIES on pages 3 to 5 of this guide could serve as a menu. An instructor might, for example, assign one activity, such as Suggested Activity 1 (on page 3), as a required project and ask students to choose another activity as an additional required task or as an optional extra-credit project. Alternatively, students could be given complete freedom to choose required and extra-credit projects. In any case, they could complete projects individually or in small groups and be encouraged to present their project findings to the whole class.

Note that Suggested Activities 1, 2, and 3 involve exploring the affect of teachers and elementary-level pupils. Suggested Activities 4 to 7 could help students better understand the Anxiety Model (math anxiety) and how fostering reasonable beliefs can help overcome math anxiety. Suggested Activities 8, 9, and 10 involve practical projects that can help students prepare for teaching mathematics. Suggested Activities 9 to 11 can serve to familiarize students with computer technology and resources available on the world wide web. Activity 11 can also help students reflect on their own concerns about teaching elementary mathematics.

Single-Activity Approach

Investigation 0.1: A Graphic Introduction (on pages 0-7 and 0-8 of the Student Guide) can serve as the basis for a cordial, informative, and interesting introductory lesson. Aims for this lesson could include the following:

1. Investigation 0.1 could provide a means for introducing group- or classmate to each other on the first day of class. This can facilitate the process of building a mathematical community.

2. The investigation could provide a genuine purpose for introducing statistics. In order to summarize the characteristics of their class, students will need to collect real data, distinguish between categorical and numerical data, and display data graphically.

3. By including one or more questions from Probe 0.1 (page 0-10 of the Student Guide) in the survey, affective issues can be raised and discussed. For example, having students rate their disposition toward teaching mathematics on a scale of 1 (dread the thought) to 5 (wildly enthusiastic) and summarizing the result graphically can create an opportunity to discuss math anxiety, why so many people dislike mathematics, and how professionals deal with their own negative disposition toward a subject.

4. Investigation 0.1 can provide an opportunity to illustrate and discuss the investigative approach and how it differs from traditional instruction.

Multiple-Activities Approach

A more conventional first lesson might consist of first discussing course information including, perhaps, the general aims of the course, course requirements, and course text(s). To address affective issues and illustrate that mathematics instruction can be enjoyable, an instructor could do the following:

1. Use Probe 0.1: Your Mathematical Frame of Mind (pages 0-10 to 0-13 in Student Guide) to raise and to discuss students' personal experience with mathematics instruction and their disposition toward mathematics and teaching it. To save time for other issues, an instructor may wish to focus on, for example, Questions 1 and 5 of Part I, Questions for Reflection 2 and 3 in Part II, and Question 1 in Part III of the probe.

2. Use Probe 0.2: The Anxiety Model—A Model of Math Anxiety (pages 0-19 and 0-20 of the Student Guide) to examine how unreasonable beliefs can cause math anxiety and how replacing those beliefs with reasonable ones can be helpful in combating math anxiety.

3. Form the class into small groups and pose the Horse problem: If I bought a horse for $50, sold it for $60, bought it back for $70, and resold it for $80, what profit, if any, did I make? (based on a problem from the videotape Mathematics: What Are You Teaching My Child featuring Marilyn Burns and distributed by Scholastic). Discuss solutions and solution strategies. This should highlight the importance of discourse (including justifying and defending one's view, listening to and weighing arguments, and reaching consensus) and the fact that many problems can be solved in many different ways. The Burns' tape can also highlight a rationale for and key aspects of the investigative approach.
4. Introduce the problem: A Winning Strategy for Equal Nim (see page 8 of this guide). Challenge members of the class to play you and to find a winning strategy. This task can be completed as homework. See Box 0.1 on pages 0-16 and 0-17 of the Student Guide for specific suggestions as to how playing this game can help a class focus on affective issues. Note that it can also create an opportunity to discuss the problem-solving heuristics of examine simple cases and look for a pattern. (By examining cases with only a few items in each row, some students may recognize that it is better to go second and keep the two rows even by mimicking what the first player does.) As a follow-up class activity or assignment, challenge the class with an extension: A Winning Strategy for Other Nim Games. This problem can serve to introduce the problem-solving heuristic relate new problems to familiar ones (i.e., use what you know). A winning strategy for Unequal Nim, for example, involves choosing to go first, transforming the game into Equal Nim by evening up the rows, and then using the winning strategy for the latter game (keeping the rows even).

SAMPLE HOMEWORK ASSIGNMENT

Read: Preface and chapter 0 of the Student Guide.

Study Group:

- Questions to Check Understanding: 1, 4, 6, and 7 (pages 5 and 6 of this guide).
- Problem: A Winning Strategy for Equal Nim (page 8).
- Bonus Problems: Unequal Nim and Odd Equal Nim (page 8).

Individual Journals: Writing or Journal Assignments 1 and 10 (pages 7 and 8).

FOR FURTHER EXPLORATION

QUESTIONS TO CONSIDER

1. Past research has not found a relationship between teachers’ mathematical knowledge and their success as mathematics instructors (see “Research on Teaching Mathematics: Making Subject Matter Knowledge Part of the Equation” by Deborah L. Ball in J. Brophy (Ed.), Teachers’ Knowledge of Subject Matter as it Relates to Their Teaching Practice (Advances in Research on Teaching, Vol. II), © 1991 by JAI Press. Consider why past research may have come to this counterintuitive conclusion. Why don’t these results make sense today in light of the efforts to reform mathematics education?

2. How is the Anxiety Model described in the Student Guide similar to or different from other models of extreme anxiety? See, for example, A New Guide to Rational Living by A. Ellis and R. A. Harper, © 1975 by Wilshire, and “Research on Affect in Mathematics Education: A Reconceptualization” by D. B. McLeod in D. A. Grouws (Ed.), Handbook of Research on Mathematics Teaching and Learning (pp. 575-596, particularly pp. 584 and 585), © 1993 by Macmillan.

SUGGESTED ACTIVITIES

1. Interview a number of teachers and students using an open-ended question such as Question 1 in Part I of Probe 0.1 (page 0-10 of the Student Guide). Analyze and classify their responses as primarily involving affective issues or as primarily involving cognitive issues. (a) Summarize your results in a table or a graph. (b) Consider what your results suggest about the importance of affect in the classroom. (c) Present your findings and conclusions to your class.

2. (a) Interview elementary-level children about their beliefs concerning mathematics. Collect data on a number of students from several different classrooms, including at least one traditional classroom, and different schools. Try to determine how they feel about mathematics. (Why it is important to sample children from different classrooms and schools?) You may want to include questions about the students’ perceived usefulness of mathematics, their confidence in solving mathematical problems, and their belief about whether mathematical ability is largely innate or due to effort. (b) Summarize your findings and conclusions in a report and present it to your class.

3. Devise an attitude scale for gauging elementary school students’ disposition toward mathematics. You may wish to include items that gauge students’ feelings about specific aspects of mathematical instruction such as doing worksheets, solving word problems, or working in groups. Some sample items are illustrated on the next page.¹
What's Your Math Mood?*

1. How do you feel about math?
   - I hate math!
   - I do not like math.
   - It is okay.
   - I like math.
   - I love math!

2. How do you feel about timed tests?
   - I hate it!
   - I do not like it.
   - It is okay.
   - I like it.
   - I love it!

3. How do you feel about word problems?
   - I hate them!
   - I do not like them.
   - They are okay.
   - I like them.
   - I love them!

4. How do you feel about math worksheets?
   - I hate them!
   - I do not like them.
   - They are okay.
   - I like them.
   - I love them!

5. How do you feel about using blocks to help you understand math?
   - I hate it!
   - I do not like it.
   - It is okay.
   - I like it.
   - I love it!

*Created using Color It! (for the figures) and SuperPaint (for the text).
4. Observe several classrooms including at least one traditional classroom. Note evidence of protective behaviors. Briefly describe the situation, the child’s behavior, and others’ reaction, if any. Briefly analyze the behavior, including what unreasonable beliefs might have helped trigger the protective behavior. Indicate what the child may have gained in the short term and what he/she may have lost in the long term. Indicate what impact the reaction of teachers, peers, or others might have had on the child.

5. Interview a student who suffers from math anxiety. Try to determine the cause of the math anxiety, including the role of unreasonable beliefs. Briefly describe how a teacher could help this student overcome his or her math anxiety. Justify your remedies in terms of the Anxiety Model described in chapter 0 of the Student Guide.

6. Read a book on math anxiety (see, e.g., the references listed on page 0-23 of the Student Guide. (a) Evaluate and summarize the advice for controlling math anxiety. (b) Present your conclusions to your class.

7. Read The I Hate Mathematics Book by Marilyn Burns © 1975 by Little, Brown and Company, Boston). Describe how reading this book might help children overcome math anxiety and whether or not these remedial processes are consistent with the Anxiety Model.

8. Choose a grade level and find a math game that would be both enjoyable and worthwhile for children to play. Briefly describe what mathematical processes, concepts, or procedures the game involves.

9. Visit a web site such as "Teachers Helping Teacher" (http://www.pacificnet.net/~mandel/) or "Teri Santi’s Homepage: A Homepage for New Math Teachers" (http://www.clarityconnect.com/webpages/terri/terri.html). Write a report for classmates describing how the web site might be helpful to teachers new to teaching elementary mathematics.

10. Surf the world wide web and make an index of web sites that might be helpful in your teaching of mathematics.

11. List several questions you have about teaching elementary mathematics. Find and visit a teacher "chat room" and pose your question. Describe and evaluate the responses you get.

HOMEWORK OR ASSESSMENT

QUESTIONS TO CHECK UNDERSTANDING

1. Circle the letter of any statement that, according to the Student Guide, is true. Change the underlined portion of any false statement to make it true.

   a. Affect involves feelings but not beliefs or attitudes.

   b. Many teachers have a negative disposition toward mathematics because they lack mathematical ability and, thus, could not understand school mathematics and chronically did poorly at it.

   c. Innate ability (as measured by a culture-free IQ test) is a better predictor of children's mathematical achievement (as measured by school grades) than is their effort (as measured by teacher ratings).

   d. Unreasonable and debilitating beliefs about mathematics and mathematics learning usually begin about fourth grade when the mathematics curriculum becomes more challenging.

   e. Beginning the school year with a math game is not a pedagogically sound practice.

2. In John Steinbeck’s The Grapes of Wrath, Jud and his father see the sheriff driving toward their home, which has been foreclosed. The two run into a field. Jud sees the Sheriff at the house, becomes angry, and starts to charge him. The father stops Jud and explains that there are two ways to think about the situation: You can say its cowardly to stay here, confront the Sheriff, and pay the terrible consequences. Or you can say we’re outfoxing the Sheriff by staying hid here and escape safely. This illustrates what key assumption about the Anxiety Model described in chapter 0 of the Student Guide? Briefly justify your answer.
3. Edvard argued that reality determines whether we feel panic or not. Knute argued that how we interpret reality determines our emotions. (a) Which fellow could use the following observation to support his claim: An optimist sees a glass half full; a pessimist sees the glass as half empty. Why? (b) Whose argument is more consistent with the Anxiety Model discussed in the Student Guide? Why?

4. According to the Anxiety Model, which of the following statements accurately reflects the relationship between anxiety and unreasonable belief? Circle the letter of any correct statement.

a. Anxiety is the direct cause of unreasonable beliefs.

b. Unreasonable beliefs are the direct cause of anxiety.

c. Anxiety arises independently of unreasonable beliefs.

d. Anxiety can indirectly reinforce unreasonable beliefs.

5. Gregor is very unsure of himself. To avoid being called on to recite before his class, he acts out (misbehaves).

a. Diagram how Gregor’s protective behavior fits the Anxiety Model.

b. Indicate the short-term and long-term effects of the strategy.

c. According to the Anxiety Model, what general principle should a teacher apply to remedy, or at least minimize, Gregor’s math anxiety?

d. Give a specific example of how this general principle applies to Gregor’s case.

6. Andrea noted in her journal, I feel scared to raise my hand to ask questions in class. Analyze her difficulty in terms of the Anxiety Model. (a) According to this model, what is the source of her fear? (b) According to the model, how should a teacher respond so as to help the student conquer her fear? (c) Give a specific example of this guideline.

7. Gunnar is so afraid of making a mistake, he refuses to answer questions in class or do his homework. According to the Anxiety Model, a teacher should take which of the following courses of action? (Circle the letter of any correct choice.)

a. Do not ask Gunnar questions in class or give him homework—that is, do not put Gunnar in any anxiety-creating situations.

b. Ask Gunnar very simple questions so that he can experience success and be praised for his success.

c. Praise Gunnar for any effort he shows—even if it is just writing his name on a homework paper.

d. Point out analogies that counter perfectionistic belief (e.g., although baseball players strive to get a hit every time at bat, they are delighted with 3 hits for every 10 times at bat).

e. Give Gunnar an ultimatum—either he contributes in class and completes his homework or he loses recess.

f. Promise Gunnar a prize every time he answers a question in class or completes a homework assignment.

g. Note that mistakes are a natural part of learning—they can help us learn.

h. Tell Gunnar that big brave boys are not afraid of a wimpy thing like math.

8. Barker, a second grader, suffers from math anxiety. Afraid to count his fingers because he might be considered dumb, the boy simply does not do his seatwork. According to the Anxiety Model, a teacher should do which of the following? Circle the letter of any correct statement below.

a. The teacher should give Barker a calculator so that he will not have to calculate on his fingers.

b. Profusely praise Barker to build up his confidence.

c. Do not give Barker any work that involves computation—that is, help him avoid anxiety-provoking situations.
d. Point out that children commonly use finger-counting strategies.

e. Mention the following true historic fact: In the middle ages, people went to college to learn finger-counting strategies because they were so useful.

f. Encourage the class to discuss why finger-counting can be helpful.

g. Encourage Barker’s parents to get him a prescription of Prosac to control his anxiety.

h. To build up his confidence, give Barker really simple calculations.

i. Explain to Barker that his problems would be over if he would just memorize the basic facts.

j. Implement a tough-love plan—clearly spell out the consequences of incomplete work.

**WRITING OR JOURNAL ASSIGNMENTS**

1. Complete the following phrase: To me math is . . .

2. Choose a career and describe how it involves mathematics.

3. Describe how you use mathematics in your everyday life.

4. Research and describe how mathematics was invented to solve a practical everyday problem in our recent or distant past. It may be helpful to consult a historical reference such as the *Historical Roots of Elementary Mathematics* by L. N. H. Bunt, P. S. Jones, and J. D. Bedient, © 1976 by Prentice-Hall, Inc., or *Historical Topics for the Mathematics Classroom*, © 1989 by the National Council of Teachers of Mathematics.

5. While discussing pay raises for teachers, a school board member argues, “I don’t see any need for increasing teachers’ salaries. I have to work from 9 to 5, eleven months a year, to earn my salary. Teachers only work 9 to 3 for 9 months, and they get all those school vacation days off too. What naive conceptions about teaching does this board member appear to have?” Based on what you read in chapter 0 of the *Student Guide*, what could you say to disabuse him of these views?

6. At one time, curriculum developers attempted to devise a “teacher-proof” mathematics curriculum. The aim was to develop a mathematically sound and challenging program that could be implemented effectively by teachers with little understanding of mathematics. Consider the efficacy of such an effort. According to the *Student Guide*, would such a curriculum be practical? Why or why not?

7. To foster a positive disposition toward mathematics, we recommended that teachers model enthusiasm about mathematics. Mabel, a preservice teacher, asked, “How can I as a teacher stay enthusiastic about subjects I dislike? I [wonder] how to keep the interest of my students in [math], which I feel weak in” (Civil, 1990, p. 300). (a) Should a teacher fake enthusiasm? Why or why not? (b) What solutions to Mabel’s problem were recommended in the chapter 0 of the *Student Guide*.

8. Analyze your own experience with mathematics instruction. What aspects of it made you or others you knew anxious or fearful? As a teacher, how could you change these aspects of mathematics instruction so that your students will develop a positive, rather than a negative, disposition toward mathematics.

9. In *Mathematics and Gender*, Elizabeth Fennema (1990) argued that “females and males do not develop the same internal belief systems to support their learning of mathematics” (p. 5). These beliefs are shaped by social pressures. Boys typically are expected and encouraged to study mathematics; girls typically are not. As a result, boys are more likely to persevere (e.g., study harder and take more advanced mathematics). Unfortunately, the “choices” girls make at the intermediate and high school level can sharply limit their choice of college majors. Girls who abide by social expectations may well not qualify for science, engineering, and premed majors. Thus, the choices they made before college close them out from many of the highest paying occupations. In effect, “mathematics has been and continues to be a ‘critical filter’ that successfully inhibits participation in many occupations” by women (Fennema, 1990, p. 2).
Consider your own education. Did you personally experience gender bias? If so, how did it affect you? If not, briefly explain what your parents, teachers, peers, and siblings did to counter the prevailing cultural expectations.

10. Note any concerns about this course or teaching mathematics you would like to discuss.

11. Anna suffers from math anxiety. One symptom of this is that she is afraid to ask questions in class when she does not understand the material. (a) According to the Anxiety Model, what is the cause of her math anxiety in general and her fear of asking questions in particular? (b) According to the course materials, how could a teacher help Anna overcome her anxiety about asking questions? Give a specific example.

12. What are your goals for this course? What specific aspects of mathematics teaching would you like the course to address? Do you have any general or specific questions about teaching mathematics?

13. Identify the persons who have had the greatest impact on your attitudes toward mathematics. Describe how their behavior influenced you. What lessons about teaching mathematics can you draw from your analysis?

PROBLEMS

A Winning Strategy for Equal Nim (◆ 3-8; third to eighth grade)

 Equal Nim is played with two rows of objects or drawn circles. The figure below shows four circles in each row, but there could be any number of items in the rows. On their turns, players may choose either row and delete as many items from it as they wish. They must, however, delete at least one item from their chosen row. The player who eliminates the last item wins (e.g., a player who eliminates the last two items would win). (a) Devise a winning strategy for Equal Nim. (b) Some children may want to play these games with beaucoup items in the rows. Is this a good idea when you are trying to find a winning strategy? Why or why not? (c) Does it matter whether there are an odd or an even number of items in each row?

Unequal Nim is played exactly like Equal Nim except that the two rows begin with an unequal number of items (see Figure A below). Odd Equal Nim is likewise played exactly like Equal Nim except that there are an odd number of rows. Figure B below illustrates the game with three rows. Find a winning strategy for each of these Nim variations. Consider how what you know about Equal Nim may help.

A Winning Strategy for Other Nim Games (◆ 3-8)

Cross-Out Singles† can be played with two or more players. Using a 0 to 9 spinner or die, a number is chosen. A player records the number anywhere they wish to on a 3x3 grid. This process is repeated until all 9 grids are filled in. Each player then sums the rows, a diagonal, and the columns and records the result of each in the appropriate circle. Any sums that appear only once are crossed out. The sum of the remaining circles is a player’s score. Devise a strategy for maximizing your chances of winning.

Cross-Out Duplicates, which has the same rules as Cross-Out Singles, except that any sums that appear more than once are crossed out.)

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†This game is described in About Teaching Mathematics: A K-8 Resource by Marilyn Burns, © 1992 by Math Solutions Publications distributed by the Cuisenaire Company of America, Inc.
ANSWER KEY for Student Guide

Key for Investigation 0.1 (pages 0-7 and 0-8)

1. (a) Responses to Data Sheet (Survey) Questions 1 to 5 would produce categorical data; responses to Survey Questions 7 to 10, numerical data. (b) Questions 7 and 8 involve discrete quantities, Questions 9 and 10, continuous quantities.

2. (a) The categorical data for Survey Questions 1 to 5 could be pictured with picture, picture bar, bar, or symbol graphs. The discrete numerical data for Survey Questions 7 and 8 could be pictured with any of the graphs already mentioned and by histograms or line plots. The continuous numerical data for Survey Questions 9 and 10 could be pictured by a line graph.

3. As any of the data can be represented as a ratio, the data of all Survey Questions could be represented by a pie graph.

4. (a) No. Even though numbers are used, they serve to name categories (i.e., they are be used in a nominal sense). (b) Yes. The responses now involve time measurements (a continuous numerical quantity).

5. Grade level is basically a categorical variable.

Key for Probe 0.2 (pages 0-19 and 0-20)

1. (a) The model suggests that to break the vicious cycle of math anxiety, a teacher must change a child’s beliefs (substitute reasonable beliefs for unreasonable ones).

2. A case could be made that confidence is a set of beliefs about one’s ability to perform. Before athletic events, coaches give pep talks, and athletes “psych themselves up.” In effect, these are efforts to instill positive beliefs (e.g., “We CAN win if we really try”), which translates into confidence. Winning athletes often are those who are able to hold on to positive beliefs (their confidence) despite setbacks (e.g., “I made a mistake but can’t focus on that now; we can still win if we keep working hard”). Losing athletes often succumb to debilitating beliefs (lose their confidence) when they encounter a setback (e.g., “Nothing ever goes right for us, what’s the use of trying.”).

3. Although they encountered the same situation, Heeran and Gwen responded in very different ways because they may have interpreted the situation differently. Heeran seemed to believe that confronting an angry authority figure would be disastrous. As a result, she did not stick up for herself but instead handled the conflict by avoiding it. Gwen apparently believed that confronting a hostile authority figure is acceptable if there are grounds to do so. As a result, she stuck up for herself and confronted the conflict directly.

4. a. See Figure 0.1 on the next page.

b. A supervisor could help by getting Heeran to question her debilitating beliefs and replacing them with constructive beliefs. For example, the supervisor could point out that for the good of their children or profession, teachers sometimes have to stand up to authority figures. Handling conflict in a professional manner can lead to self respect and the respect—if not the love—of others.

5. According to the Anxiety Model, perfectionistic beliefs can cause maladaptive procrastination, panic over public speaking, and fear about asking questions.*

The Case of Leigh. Avoiding work can be a self-destructive way of coping with anxiety (see Figure 0.2 on the next page).

The Case of the Nervous Public Speaker. The confident Mrs. Positive sees her address as an opportunity to inform her audience about the exciting adventure her class is about to begin. She views questions as a healthy sign of concern by involved parents and as an additional opportunity to clarify her exciting program. Mrs. Positive recognizes that she may make mistakes but sees this in perspective. For example, she believes that her audience will be more interested in her message than dissecting her performance for flaws.

Although confronting the identical situation, the nervous Mrs. Negative sees it very differently. She tells herself unhelpful and inaccu-

* Under some circumstances, procrastination can be adaptive. For example, postponing tedious and unimportant tasks can be a way of not wasting valuable time and energy. With time, sometimes unwanted and useless assignments are cancelled.
Figure 0.1: Anxiety Model of Heeran's Situation

Heeran's Unreasonable Beliefs

I am unworthy to challenge an authority figure; a challenge would only mean terrible consequences for me.

Long-term loss: Reinforces beliefs, and prevents Heeran from learning that there can be beneficial consequences of handling conflict in other ways.

Threat: Conflict with Mr. Beast.

Protective Behavior: Avoid the conflict by pretending it does not exist and changing the subject.

Anxiety (panic).

Short-term gain: Minimizes the conflict and the anxiety.

Figure 0.2: Anxiety Model of Leigh's Situation

Leigh's Unreasonable Beliefs

Smart kids always do a perfect job (e.g., always answer correctly).

Smart = good = worthy.

Unreasonable conclusion: I don’t always do a perfect job so I’m not smart, good, or worthy.

Long-term loss: Assignment done at last minute is not good, resulting in a bad grade + the approbation of teachers, parents, peers (beliefs reinforced).

Assignment = threat: If I do a less than perfect job (e.g., get anything wrong), then everyone will discover that I’m not smart, good, or worthy.

Protective Behavior: Put off doing the assignment (avoid the threat).

Anxiety (panic).

Short-term gain: Quells anxiety because there is no chance of not doing a perfect job.

(Excuse: No one can blame me for a less than perfect job if I do it at the last minute.)

rate things such as, “Only a perfect performance is acceptable” and “Those who are less than perfect are worthless and undesirable.” Because she does not see errors in perspective, Mrs. Negative views public speaking as a threat—as an occasion to be humiliated and rejected. For example, she tells herself, “I’m sure to make a mistake, and everyone will discover that I’m imperfect and unworthy.” Questions from the audience compound the threat. For instance, she may tell herself, “I’m sure they’ll ask me questions that I’ll slip up on, and everyone will see I’m flawed.” These perceived threats create anxiety about her talk. To reduce this anxiety, Mrs. Negative responds with protective behaviors. To excuse what she is certain will be a flawed presentation, Mrs. Negative may, for example, show up to Get-Acquainted Night late, apologize for not being prepared or organized, or say how much she hates public speaking.
In the short term, Mrs. Negative may successfully reduce her anxiety by creating an excuse for her mistakes—thus minimizing the possibility of humiliation and rejection. In the long run, however, the protective behaviors may simply reinforce her unreasonable beliefs. Mrs. Negative's audience may be put off by her tardiness or excuses. What was supposed to protect her from humiliation and rejection can have the opposite effect. The discomfort or irritation of her audience can be further proof that her beliefs were correct—you do have to be perfect to be liked. With her unreasonable belief stronger than ever, Mrs. N's next encounter with public speaking would be even more threatening and anxiety provoking. She is caught in an emotional vicious cycle that never gives her a chance to learn that her unreasonable ideas are wrong.

Figure 0.3: Anxiety Model of Gregor's Situation

<table>
<thead>
<tr>
<th>Unreasonable beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart people are always right.</td>
</tr>
<tr>
<td>I'm not always right and, thus, not smart.</td>
</tr>
<tr>
<td>If I'm not smart, then I am not good or lovable, and others will reject me.</td>
</tr>
</tbody>
</table>

Protective behavior: Act out

Recitation = threat because I may be wrong.

Anxiety

Short-term gain: disciplinary sanction eliminates the chance of reciting and the anxiety.

Long-term loss: do not learn, increasing the chances of being wrong later—a result that only reinforces the unreasonable beliefs.