

These are just a few questions among scores of others that spring from the texts in this unit. Such questions encourage us to think about ourselves as thinkers. Again, a special aim of this preliminary unit is to show you that learning can become exhilarating as you invest yourself in that process. It's not always easy, however, to learn new things. As a matter of fact, Eliot A. Butler, one of the essayists mentioned above, cautions, "To learn is hard work. It requires discipline. And there is much drudgery. When I hear someone say that learning is fun, I wonder if the person has never learned or he has just never had fun" (26). Yet, as with all demanding pursuits, we know there are also moments of excitement.

1: 1 beat  
3: 4, 24  
"When I hear someone say that learning is fun, I wonder if the person has never learned or he has just never had fun."

Acclaimed mathematician Jacob Bronowski describes such a moment of intellectual discovery—in art or in science—as an instant when "the heart misses a beat" (14).

Should you be assigned to read some of this unit's essays or choose to read them on your own, I hope you will better see your God-given capacity to learn. And I hope too that in your college experience your heart might also "miss a beat" as you discover that the realm of ideas is an exciting place to explore. If learning truly is our theology, then learning how to learn and thinking about how to think deserve our best efforts.

### A Strategy for Reading

Some believe that a principal aim of college is learning how to learn. Obviously, if we are equipped with life-long learning strategies, we are better able to function in an age that requires skilled workers and affords cultural opportunities for an enriched life. Learning to read with a strategy is an indispensable tool for college and for life,

both for career development and pleasure.

Often in college, we are challenged to read large quantities of materials, to understand them, to remember them, to apply them—and to enjoy them. When I was in college, I recall reading my homework while lying on my bed. Inevitably, I would slip in and out of a comatose state, but I stuck out each assignment until I got to the last word on the last page. As a freshman, I thought these efforts were equal to the task, but I soon learned of my deficiencies as a reader. Arriving at class, I often wondered if I had read the same chapter the teacher had assigned. During discussion the material seemed only vaguely familiar. And quizzes! I was stuck in a B range. I wondered if that was the best my native intelligence could crank out. I found this experience alarming and began to question my intellectual ability. Maybe I was only a B student, especially since I had heard that freshmen typically drop their high school grade point averages one whole letter to figure their college GPA's. In short, I was beginning to feel that my academic fate was pre-determined.

However, I eventually discovered study routines that gave me more control of my educational destiny. For example, I learned that there are very simple strategies that markedly improve reading skills. Initially, they require a bit of time, but in the long run, they pay off. Here's why. Trying to be a good freshman, I remember *re-reading* all of

PURPOSE    TOPIC    ISSUE    CONCLUSION

the assigned chapters while studying for exams. Honestly, I can remember reading *five* chapters of zoology *twice*, once to prepare for class discussion and once to review for a unit exam. What I hadn't yet learned was a strategy for reading these chapters "smart" the first time, a strategy that would have enabled me to review chapters during successive study sessions, rather than having to re-read them in their entirety. So what does reading "smart" entail?

1. *Surveying The Text: PTIC*

Everything I've encountered about reading—the kind of reading that requires engagement, comprehension, and retention—suggests that you should take a few minutes to survey a text before reading it completely through. To make the "survey" simple, I've come up with an acronym—"PTIC." The strategy goes like this: After reading the introduction and conclusion of a text, ask yourself four questions, jotting the answer to each wherever you are taking notes. Think of each question as a step that will take you closer to the thesis, the writer's most important point.

*Step 1, Discerning the Purpose: Why is the writer writing?*

The letter "P" in the PTIC strategy stands for *purpose* and poses this question: "Why is the writer writing?" Unless you're reading creative literature—fiction, drama, or poetry—most likely the material you'll be studying in college will have one of two broad purposes: either to explain or to persuade. Writing to explain is often referred to as expository writing; writing to persuade, as argument. Determining which of these broad purposes the writer intends helps you anticipate how to interpret the text you'll be reading. (I use the term *text* somewhat generically to refer to any kind of reading material you might encounter in college.) If the writer's purpose is to explain, you naturally begin looking for the important concepts the writer intends to clarify; however, if the writer's purpose is to argue or to persuade, you shift to another gear. You often begin to look for the claim in the argument and the reasons the writer gives to support that claim. You may also take a stance of caution while reading arguments: will you believe what you're reading, disbelieve it, or reserve judgment until you know more? The point is that you process your reading texts differently depending on the writer's purpose.

expository  
↳  
persuasive

*Step 2, Discovering the Topic: What is the writer writing about?*

The letter "T" in the PTIC strategy stands for *topic* and poses the second question: "What is the writer writing about?" Stating a writer's topic as precisely as you can will help you clarify the writer's thesis or conclusion, as we shall see in the next "survey" steps. Your answer to this topic question might sound something like this: "The writer is writing *about* the parking problem at BYU-Idaho." Or "she is writing about how texting becomes addictive."

*Step 3, Posing the Issue: What is the main question the writer is asking?*

The letter “I” in the PTIC strategy stands for *issue*. An issue is a question. When you read to uncover a writer’s issue, you are asking, “What is the main question the writer seems to be asking in this text?” If you’re a bit stumped about how to pull an issue question out of an essay—issue questions are most often implied—you may want to take another look at the topic you’ve just identified in Step 2. Turning this topic into a question will help you identify the writer’s principal issue. For example, the topic about parking problems at BYU–Idaho might yield the issue question, “Should the university construct a parking plaza near the new auditorium?” The texting topic might produce the question, “Are social skills declining because of excessive texting?”

*Step 4, Stating the Conclusion: How does the writer answer the issue question?*

The letter “C” in the PTIC strategy stands for *conclusion* and takes you to the final question: “How does the writer answer the issue question?” As you answer the issue question in a single sentence, you have articulated the writer’s thesis, the single most important point in the text. Remember, at this survey stage of reading, you are trying to find the writer’s thesis by examining just the introduction and conclusion of the text. While it’s true that such a survey may not yield a finely-tuned rendering of the writer’s main point, a preliminary thesis idea will help you make better sense of what you are about to read.

To clarify, imagine this analogy: surveying a text to discern a writer’s thesis is a bit like getting a glimpse at a blueprint to see what a building will look like. With a blueprint in mind, a builder knows how the distinct parts of a structure will eventually become a completed edifice. In a like manner, with a thesis in mind, a reader knows how writer’s ideas will combine to clarify a thesis.

*Demonstration*

What follows are the first and last paragraphs of a short but thought-provoking essay by Harold J. Morowitz, a molecular biophysicist. For practice, read these two paragraphs, and with that information in mind, PTIC the essay: answer each of these four questions as best you can, even if you feel like you’re guessing. Write your answers in the margins near the beginning of Morowitz’s essay.

- ▶ *Purpose:* Why is Morowitz writing?
- ▶ *Topic:* What is Morowitz writing about?
- ▶ *Issue:* What is the issue question Morowitz seems to be asking in “Hemlock”?
- ▶ *Conclusion:* How do you think Morowitz answers this question?



100

- ▶ Why is Morowitz writing?
  - ▷ Morowitz is writing to argue. He wants me to believe there is a problem (that TV foists onto us information of questionable validity) and a solution to that problem (that we need to figure out what makes information valid).
- ▶ What is Morowitz writing about?
  - ▷ Morowitz is writing about how TV encourages us to believe things that we should question.
- ▶ What is the central issue question Morowitz is asking in "Hemlock"?
  - ▷ Morowitz's central question is something like, What can be done to make us more sensitive to the validity of TV information?
- ▶ How does Morowitz answer this issue question?
  - ▷ Morowitz answers this implied question directly in the third sentence of the concluding paragraph, which paraphrased might sound like this: To avoid being taken in by questionable information, we should all learn how reliable knowledge is determined.

Just thinking about what is important to underline helps to keep you involved in your reading.

## 2. Reading the Text

Having established a preliminary sense of the writer's purpose, topic, issue, and main point, you are now ready to read your text—underlining important ideas and paraphrasing them in marginal notes. Underlining key ideas in a text keeps you engaged in your reading. Most experts suggest that you underline sparingly. This suggestion may be easier said than done, but just thinking about what is important to underline helps to keep you involved in your reading. You might also think about applying the PTIC strategy to complex paragraphs along the way: What is the purpose of this paragraph? What is the writer writing about in this paragraph? What is the central question you should be able to answer after reading this paragraph? How does the writer answer this central question? These kinds of questions direct your attention to key ideas to underline.

As you are underlining these key ideas, pause to paraphrase them in marginal notes. Paraphrasing encourages comprehension. Often we are inclined to memorize what we underline without understanding. On the other hand, paraphrasing is like translating. You cast someone else's words into your own. Doing this, you better grasp what you are reading. Good marginal notes serve as an outline for a text and make review a more manageable task than having to re-read entire chapters. Learning theorists tell us too that reviewing these notes three or four times over a period of a few days actually kicks these ideas from short-term memory—cramming—to long-term memory—retention.

## *Demonstration*

Here now is "Drinking Hemlock" in its entirety. In the first few paragraphs, I have demonstrated how I might go about underlining key ideas and making brief marginal notations. You might want to pick up where I leave off and then share your notations with a classmate. Remember, the temptation is to underline too much, but if you are discriminating, you'll be more thoughtful about what you're reading and more likely get at Morowitz's most important points. Remember that the most useful marginal notations are paraphrases of the writer's ideas. You'll be surprised to see how much your comprehension improves as you push yourself to translate the writer's original language into your own. And don't hesitate to keep your dictionary handy to improve your paraphrases. Circle words you don't know, look them up, and jot down short definitions in your margins. As with other marginal notes, review your definitions a few times to pull these new words into your permanent vocabulary.

### "Drinking Hemlock and Other Nutritional Matters"

It was a rather dark, bleak morning, and after rising early I thought it appropriate to turn on the television and communicate, unidirectionally to be sure, with the outside world. There to my great surprise was a famous movie star of a few years back discoursing on the evils of sugar. The former Hollywood idol was vehement in her denunciation of this hexose dimer particularly in its purified and crystallized form. She denounced it as an "unnatural food," an epithet that may well have bruised the egos of the photosynthesizing cane and beet plants. The mental image evoked was that of a solemn judge sentencing someone in perpetuity for an "unnatural act." In no time at all this great lady had me caught up in her crusade, and I kept muttering "hate sucrose" as I prepared an unnatural extract of coffee beans and dropped in a highly synthetic saccharin tablet.

A few minutes later, when the veil of sleep had lifted and the uncertainty of reason had replaced the assuredness of emotion, I began to wonder where my cinema heroine had acquired such self-righteous certainty about biochemical and nutritional matters that have eluded my colleagues for years. Perhaps all this messy experimental work of grinding and extracting tissue and otherwise mucking about the laboratory is not the shortest road to truth at all, and we of the dirty white lab coat crowd are missing some mysterious pathway whereby true nutritional knowledge comes with blinding insight and transforms the lives of the faithful.

All of this recalled a frequent, painful experience that haunts biomedical scientists like a recurring nightmare. One is at a cocktail party or other social gathering where someone appears in the crowd and begins an oratorical declamation on Good Nutrition. The "facts" being set forth are often inconsistent with everything one knows about metabolic pathways, cell and organ physiology, enzymology, and common sense. If the listener is so bold as to raise the question, "How do you know that?", he or she is greeted with a look that must have faced Columbus when he queried, "How do you know that the world is flat?"

*Intro—actress on TV slams sugar and pulls Morowitz in.*

*Where did actress get info?*

*People often spout opinions that disregard facts.*

Everyone  
thinks he's an  
expert.

Schools fail to  
teach how facts  
are determined.

we ignore  
important questions as  
the method to  
obtain knowledge

Difficult to  
prove that  
the scientific  
method is  
reliable

Nutrition seems to be like politics; everyone is an expert. It would appear that to the general public years of education are as naught compared to knowledge somehow painlessly available to everyone, regardless of his familiarity with innumerable facts and theories that constitute a complex discipline.

The situation described is by no means confined to the choice of foods, and I certainly feel ill prepared to get involved in the sucrose controversy. Nevertheless, the field of nutrition is a good example of the many areas where we are constantly subject to a host of dogmatic statements, some of which are true, some of which are false, and many of which are indeterminate. The response to each of these assertions should be the query, "How do you know that what you are saying is indeed a statement of fact?" At this level of question, I believe our educational system has been a total failure.

Asking how we know the things that we know is part of the philosophic discipline of epistemology, the theory of knowledge, which is usually taught in upper-level and graduate philosophy courses and is therefore restricted to a small group of college students. But can there be any study that is more basic to education? Should not every high school graduate be prepared to cope with the many incorrect and misleading assertions that come his way every day? On the surface it seems strange that acquiring skills in assessing the validity of statements is not a core feature of the school curriculum.

Education, as conceived at present, is largely a matter of transferring subject matter from teacher to student, and uncertainty is usually settled by appeal to authority, the teacher, a textbook, or an encyclopedia. The methodological issue of how knowledge is obtained is rarely mentioned. Thus one of the most important analytical tools that an educated individual should possess is ignored. This is not to argue against the transfer of information but rather to assert that by itself it is insufficient protection in a real world containing demagogues and all kinds of charlatans and hucksters who have a free rein because almost no one is asking the appropriate questions.

On the issue of sorting out reality, most holders of doctoral degrees are almost as naive as grade-school graduates, and all manner of academic disciplines also expend effort on statements that would be quickly discarded if epistemological criteria were invoked. This takes us back briefly to the subject of nutrition, where methodological problems make it very difficult to obtain even pragmatically useful information. Statements are made on the basis of averaging over populations when we have no ideas of the distribution functions that go into forming the averages. The impossibility of large scale experiments with people requires extrapolation of animal or small-scale human determinations over ranges where the correctness of the extrapolation procedure is unknown. Nutrition is thus beset with difficulties that are clearly of an epistemological nature and, until these are resolved, careful scientists will be confined to very limited statements. Dogmatic assertions will remain the province of cocktail party orators.

The problem of why the theory of knowledge is not taught in the schools is relatively easy to see. Epistemology is, after all, a dangerous subject. If we start

to question the validity of statements, then the teachers themselves come under question. All assertions about education, established forms of religion, government, and social mores will also be subject to justification on the grounds of how they are known to be true. For parents and teachers who have not been through the experience of exploring how we determine facts, it would be unnerving to have their children continuously question the roots of knowledge. Inquiry is indeed a challenge to the acceptance of things as they are.

To realize the threat to established ways that is perceived in the type of analysis we are discussing, we need to go back to ancient Athens, where the philosopher Socrates taught his young followers by the technique of questioning everything and seeking answers. As Will Durant has noted, "He went about prying into the human soul, uncovering assumptions and questioning certainties." This has come to be known as the Socratic method. The citizens of the Greek city-state condemned the inquiring teacher to death by poisoning with hemlock. One of the most serious charges against him was "corrupting the young." The fate of the first propounder of the Theory of Knowledge has perhaps served as a warning to keep the subject out of the school system.

There is still an objection that it is dangerous to teach the art and science of inquiry to the young; I would submit that it is more dangerous not to teach it to them, thus leaving them vulnerable to the quacks and phonies who now add mass communication to their bag of tricks. If we believe that rationality will lead the way to the solution of problems, then we must start by making the examination of what is "real" a part of everyone's thought. If challenging young people are a nuisance, think of how much more of a menace is presented by young people marching off in lock step and never questioning where they are going.

The solution seems clear. When we return education to the basics of reading, writing, and arithmetic, we should add a fourth R, "Reality." Starting at the first grade and continuing through graduate training we must see that students become sensitized to the meaning of what is said and the realization of how valid knowledge is established. If this seems radical, it is. Drinking hemlock may be less painful than swallowing some of the drivel that comes over the TV set every day.

### 3. Reworking Your PTIC

After reading Morowitz's essay "smart" (or any other text you need to study carefully), take a moment to re-state the writer's conclusion/thesis statement with precision. Doing so will assure your comprehension. And reviewing this refined thesis and your paraphrased marginal notes over time will sink these keys ideas into your memory. A simple strategy like this can build your confidence at exam time. And perhaps more importantly, you can have the satisfaction of knowing that what you have read now belongs to you.

The danger  
of dogmatism  
is to question

Socrates  
was a  
trickster

we must  
learn to  
question  
what we  
know

real knowledge  
comes through  
questioning  
something (at least  
the world) to reach  
proper understanding  
old how to find  
what's real by  
questioning what  
they might be  
accept otherwise