Seven Universal Principles of Student Success

Joe Cuseo
Professor Emeritus, Psychology; Educational Consultant, AVID
(jcuseo@earthlink.net)

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Universal Principles of Student Success & *High-Impact Practices* for Implementing Them

1.

PERSONAL VALIDATION

Student success is fostered when students feel personally *significant*—i.e., when they feel recognized as *individuals*, that they *matter* to the institution, and that the institution *cares* about them as whole persons (Rendón, 1994; Schlossberg, Lynch, & Chickering, 1989; Terenzini, et al., 1996).

High-Impact Practices:

* Creating a *Welcoming* (& Validating) *First Impression*

* *Knowing* Our Students:
  a) Their names (knowing who they are)

  b) Their personal talents, interests, aspirations, etc. (knowing about them)
  [See Appendix A.]

* Treating & Educating the Student as a *"Whole Person"*

2.

SELF-EFFICACY

Students are more likely to strive for and achieve success when they believe that their *personal effort* matters—when they think they can exert significant *influence or control* over the outcomes of their life and their future success (Bandura, 1997; Chemers, Hu, & Garcia, 2001; Csikszentmihalyi, 1990; Elias, & Loomis, 2002; Multon, Brown, & Lent, 1991; Solberg, et al., 1993).

High-Impact Practices:

* Balancing *Challenge & Support* for Optimal Growth: "Scaffolding"

* Exposing Students to *Successful Role Models* (With Whom They Can Identify)

3. *PERSONAL MEANING*

Success is more likely to take place when students find *meaning or purpose* in their college experience—i.e., when they perceive *relevant connections* between what they're learning in college, their current life, and their future goals (Ausubel, 1978; Fink, 2002; Mezirow, 2000; Ryan & Deci, 2000; Wlodkowski, 1998).

High-Impact Practices:

* Helping Students Appreciate the Meaning, Purpose, & Value of *College*

* Helping Students Make *Meaningful Connections:* (a) across the curriculum, (b) between the curriculum and co-curriculum, and (c) between the college experience, their current life, and their future goals

4. *ACTIVE INVOLVEMENT*

Success increases commensurately with the degree or depth of student *engagement* in the learning process—i.e., the amount of *time* and *energy* that students invest in the college experience—both *inside* and *outside* the classroom (Astin, 1993; Kuh, 2001; Kuh, et al., 2005; McKeachie, et al., 1986; Pascarella & Terenzini, 1991, 2005).

High-Impact Practices:

* Involving Students Inside the Classroom via *Engaging Pedagogy*

* Involving Students Outside the Classroom in *Support Services & Campus Life*

5. *SOCIAL INTEGRATION*

Student success is promoted by *human interaction, collaboration,* and the formation of *interpersonal relationships* between the student and other members of the college community—peers, faculty, staff, and administrators (Astin, 1993; Bruffee, 1993; Johnson, Johnson, & Smith, 1998; Slavin, 1996; Tinto, 1993).

High-Impact Practices

* Promoting Interaction between Students and:

  (a) *faculty* outside the classroom

(b) <u>*staff*</u> in campus offices & support services

(c) <u>*peers*</u> inside & outside the classroom

6. *PERSONAL REFLECTION*

Success is more likely to be experienced by students who engage in reflective thinking about their learning experiences, *elaborate* on them and *transform* them into a form that connects with what they already know or have previously experienced (Bruner, 1990; Ewell, 1997; Flavell, 1985; Svinicki, 2004; Vygotsky, 1978).

High-Impact Practices

* Encouraging Student Reflection on:

(a) *academic* learning inside the classroom

(b) *experiential* learning outside the classroom

[See Appendix B.]

7. *SELF-AWARENESS*

Success is more likely to be experienced if students become *aware* and remain *mindful* of their learning strategies, learning habits, and ways of thinking (Brooks, 2009; Buckingham & Clifton, 2001; Langer, 1989, 1997; Pintrich, 1995; Weinstein & Meyer, 1991; Weinstein & Underwood, 1985).

High-Impact Practices

* Encouraging Student Self-Awareness via:

(a) *Self-Monitoring*: periodically stopping to monitor whether they're truly learning what they're attempting to learn—i.e., whether they're engaging in "deep learning" vs. "shallow learning" (surface memorization).

(b) *Meta-Cognition*—thinking about how they are thinking—i.e., the nature of their thought process.

(c) *Self-Regulation*—adjusting or modifying their learning strategies to meet the distinctive demands of different academic disciplines, learning tasks, and testing formats.

(d) *Self-Assessment*—gaining awareness and self-insight into their learning styles, learning habits, personal interests, aptitudes (talents) and values; and using this self-knowledge to make meaningful, realistic life choices and decisions (e.g., decisions about their educational and career goals).

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Addendum

Key Properties/Principles of Effective *Educational Interventions* and *Student-Success Support Programs*

1. *INTENTIONAL (PURPOSEFUL)*: They are *deliberately* designed and delivered with *research-based principles* of student success in mind, namely:
* Personal Validation.
* Self-Efficacy,
* Active Involvement (Engagement),
* Personal Meaning,
* Social Integration,
* Personal Reflection, and
* Self-Awareness.

2. *STUDENT-CENTERED*: They are centered on and driven by the *educational needs and personal welfare of students,* rather than by institutional habit or convenience, or by the self-serving needs and preferences of faculty, administrators, or staff.

3. *MISSION-DRIVEN*: They are grounded in and guided by a well-articulated *program mission* that is consistent with the *college or university mission*.

4. *INTRUSIVE*: They are not offered passively on a come-find-and-use basis, i.e., waiting and hoping that students will discover and capitalize on them ("passive programming"); instead, supportive action is *initiated* by the institution by actively *reaching out* to students and bringing its services *to* them, thereby ensuring that support reaches students who are unlikely to seek it out on their own.

5*. PROACTIVE*: They take *early, preventative* action that address students' learning needs and developmental adjustments in an *anticipatory* fashion—*before* they eventuate in problems that require reactive (after-the-fact) intervention.

6. ***DIVERSIFIED***: They are *tailored or customized* to meet the *distinctive* needs of different student *subpopulations* (first-year students, underrepresented students, transfer students, etc.)

7. *COMPREHENSIVE (HOLISTIC)*: They focus on the student as a "*whole person,"* addressing the multiple dimensions of self that affect student success (social, emotional, physical, etc.).

8. *DEVELOPMENTAL*: They are delivered in a *timely, stage-sensitive sequence* that helps students accommodate challenges as they emerge at successive phases or stages of their college experience, and in so doing, promote student growth by providing a "scaffold" that balances *challenge* with just-in-time *support*.

9. *COLLABORATIVE*: They involve cooperative *alliances or partnerships* between different organizational units of the college/university, which work together in a *complementary* and *interdependent* manner, harnessing their collective power to exert synergistic (multiplicative) effects on student success.

10. *SYSTEMIC*: They occupy a *central* (rather than a peripheral or marginal) place on campus, which positions them to produce a *pervasive* effect on the student body and the potential to exert *transformative* effects on the institution itself.

11. *DURABLE*: They are *institutionalized*—i.e., they're built or weaved into the fabric of the institution (e.g. its table of organization and annual budget process), thus ensuring the program's *longevity* and its capacity to exert *perennial* impact on successive cohorts of students across an extended period of time.

12. *EMPIRICAL (EVIDENTIARY)*: They are supported by *assessment data* (both quantitative and qualitative), which are used for *summative* evaluation —to "sum up" and *prove* the program's overall impact or value, and *formative* evaluation— to "shape up" and continually *improve* program quality.

Appendix A

The material in Appendix A and B have been excerpted from the *Instructor's Manual* for the textbook, *Thriving in College & Beyond: Research-Based Strategies for Academic Success & Personal Development*, 2nd ed., Cuseo, Fecas, & Thompson (2010). Dubuque, IA: Kendall/Hunt.

STUDENT INFORMATION SHEET
Potential Questions

PERSONAL <u>BACKGROUND INFORMATION</u>

1. Your *name* (as you prefer to be called)?
2. *Phone* number/*E-Mail* number (optional)?
3. Place of *birth*? Places *lived*? Currently, living on campus (where) or commuting (from where)?
4. What is your *class schedule* for this term? (Course *titles* and *times)*?
5. How many *college credits* have you *completed*? (Freshman, sophomore, junior, senior?)
6. Why did you choose *this college*? (What brought you here?)
7. Have any of your *friends* or family *attended* college? *Completed* college?
8. Have you attended any *other colleges*? (If yes, where and when?)
9. What *jobs* or *volunteer* experiences have you had?
10. Will you be working or volunteering *this term*? If so, how many *hours per week*? *On* or *off campus*?
11. Will you have *family responsibilities* this term?
12. Has anyone in your *immediate family* (parents or siblings) *graduated from college*?

FUTURE <u>PLANS</u>

13. Intended *major* (already decided or being considered)? *How sure* are you about this choice? *What led you* to it?
14. What are your *plans* (definite or tentative) after *graduating* from this college?
15. Intended *career*? (Already decided or just being considered?) *How sure* are you about this choice? *What lead you* to choose or consider this career?

PERSONAL <u>ABILITIES</u>, <u>ACHIEVEMENTS</u>, & <u>DISTINCTIVE QUALITIES</u>

16. What are you really *good* at? What comes *easily* or *naturally* to you?
17. What would you say are your most well-developed *skills* or *talents*?
18. How do you think you *learn best*?
19. What would you say has been the greatest *accomplishment*, *achievement*, or *success story* in your life thus far?
20. What *three words* do you think *best* describe *you*?
21. What would your *best friend(s)* say is your *most likable quality*?
22. What would you say are your personal *strengths* right now? What personal areas you would like to *work on* or *improve*?

PERSONAL <u>INTERESTS</u>

23. What sorts of things do you *look forward to*, and get *excited* about?
24. What sorts of things *capture and hold* your *interest*?
25. What would you say have been your *<u>most</u> enjoyable* & *<u>least</u> enjoyable* learning experiences?
26. What are your *hobbies*? *Fun* activities?
22. How do you *relax and unwind*?
27. If you had a day, week, or year to *go anywhere* you wanted to go, and *do anything* you wanted to do, *where* would you go and *what* would you do?
28. What do you like to *read*?
29. When you open a *newspaper*, what *section* of it do you turn to *first*?
30. What's your favorite *movie and/or TV program* (if any)?

31. What's your favorite *music* or *musical artist(s)*?
32. Is there anyone dead or alive, real or imaginary, whom you've never met but would like to *meet* and have a *conversation* with? (Why?)

PERSONAL <u>VALUES</u>

33. What's very *important* to you?")(What *matters* to you the most?)(What is something you really *care* about?)
34. When you have *free time*, what do you usually find yourself doing?
35. When you have extra spending *money*, what do you usually find yourself spending it on?
36. Is there a *motto*, *quote*, *song*, *symbol*, or *bumper sticker* that represents something you stand for or believe in?
37. If there is one thing in this world you could *change*, what would it be?)
38. How would you define *success*? (What does *"being successful"* mean to you?)
39. When your mind drift off and begins to *daydream*, do you tend to daydream about anything in particular?
40. Do you have any *heroes*? Is there anyone you *admire, look up to*, or believe has *set an example worth following*? Why?
41. Who or what would you say has had the *greatest influence on your life* thus far? (In what way?)
42. If your house contained everything you own, and it caught fire, but you had time to rush in and retrieve one item, what would you retrieve? Why?"
43. If there is anything in your life you could *change or do over again*, what would it be? Why?
44. What would you like to be said about you in your *obituary* or at your *eulogy*?

COURSE <u>EXPECTATIONS</u>, <u>ATTITUDES</u>, & <u>INTERESTS</u>

45. *Why* are you taking this course?
46. When you hear "[title of the course]" what's the *first thing* that comes to mind?
47. What information or topics do you *think* will be covered in this course?
48. Have you had any other *courses* or *learning experiences* in this subject area?
49. Do you have any course *expectations or goals*? Anything that you *hope* will be *covered or discussed* in this class?
50. Right now, how do you *feel* about taking this course—positive, negative, neutral? (Why?)
51. Is there *anything else* about the *course*, or about *yourself*, that I haven't asked, but you think would be interesting or useful for me to know?

THANKS.

THE STUDENT INFORMATION SHEET:
A Proactive Strategy for Initiating Teacher-Student Rapport

The first and foremost goal in the FYE course should be to establish rapport with your students. Meeting students' need for acceptance and validation is a necessary precondition for establishing the social-emotional foundation needed for subsequent learning and personal growth. It has been my experience that students begin to care more about learning and become more committed to the learning process when they sense that their instructor cares about them.

One way to gain and maintain instructor-student rapport is through use of what I call the "Student Information Sheet." The sheet contains questions for students to answer, which I've divided into six general areas: (1) personal background, (2) future plans, (3) personal abilities, achievements, and distinctive qualities, (4) personal interests, (5) personal values, and (6) course expectations, expectations and interests. (See the list of questions at the end of this exhibit for a specific list of questions relating to each of these six categories.)

On the first day of class, I distribute the course syllabus, but do not spend class time systematically reviewing it. Instead, I tell students that their first assignment is to read the syllabus for the next class session and that I prefer that our first meeting together should focus on people, not paper. I tell my class we're going to take some time to learn about each other before we attempt to learn the subject matter, then project questions related to the aforementioned six areas. I reveal one question at a time, and have students record their answers to each question on a sheet of paper. At the same time students are recording their answers, I write my answers on the board to the same questions (except for those questions that are student-specific, such as class standing). By answering the questions along with your students, I show my class that I trust them well enough to reveal something personal about myself, which in turn, makes them feel more comfortable about revealing more of themselves to me. Also, my answering the questions with them serves to validate the exercise, suggesting that it's worthy of my time and effort as well.

This exercise typically takes about one minute per question, i.e., 40 questions takes approximately 40 minutes. I typically use no more than 30 of the questions, because I want to reserve some class time to collect the information sheets and review students' names. I like to keep the process moving fairly quickly by advising students that they can use short sentences or single words and phrases to answer the questions (as I do on the board). Also, short and fairly quick responses often seem to capture students' true thoughts or feelings in response to the question (their "free associations"), as opposed to calculated, socially acceptable responses.

After the exercise is completed, I collect each student's information sheet and use it in the following ways to promote rapport with the class throughout the term.

1. On the first day of class, after I've collected all the information sheets, I call-out the names of individual students, asking them to raise their hand when their name is called so I can associate their *name and face*. As I call out their names, I very rapidly jot down a quick word or abbreviated phrase next to the student's name for later review (e.g., something about a distinctive physical feature or seating spot that can help me remember the student's face and name).

2. Before the next class meeting, I read all student responses to the questions and highlight one from each student's sheet that is thought-provoking or stimulating. I come to the second class session with something highlighted on each student's sheet, and I start class by calling out each student's name and ask each student in class for a brief elaboration on the item I've highlighted (e.g., When did you move from New York to California? When you worked with handicapped children, what type of assistance did you provide?) This shows all students that I've taken to time to read their information sheets and am taking an *individual interest* in each one of them. The short verbal interchange I have with each student also helps me immensely in learning their names, because it allows more eye-contact time than that which occurs during a simple roll call, and it provides a distinctive event or interactive "episode" to which I can relate (associate) their face and name.

3. Throughout the term, I use the information sheet to *actively involve* individual students in the course. I identify topical interests that individual students mentioned on their information sheets during the first day of class, record the student's name on a post-it sticker, and then stick it onto my class notes—next to the topic or subtopic that relates to the student's interest. When that particular topic is covered later in the term, I introduce it by mentioning the name of the student who had expressed interest in that topic on the first day of class. It has been my experience that students perk-up when I mention their name in association with their preferred topic, and they are often amazed by my apparent ability to remember the interests they expressed on the very first day of class at much points later on in the term. Students rarely ask how I managed to remember their personal interests, so they remain unaware of my

"crib sheet" strategy. Consequently, they tend to conclude that I have extraordinary social memory and social sensitivity (which is perfectly fine with me).

I also use the student information sheet for the following purposes.

4. To make final decisions about what particular *topics* to cover in the course.
I'll use student interests expressed on the information sheet to help select course topics and subtopics. Although I decide on a set of core concepts or topics to be covered in the course, I use information gleaned from students' sheets to decide on what other "supplemental" topics I'll cover. I inform the class that I've used their input to help me decide on what topics to include in the course, which gives them a sense of course input and course ownership, which I think serves to enhance their intrinsic motivation.

5. To make personal connections with *non-participative or "detached"* students.
For example, before class, I may strike-up a conversation with a shy student about something from her information sheet. Or, as students leave the classroom at the end of class, I typically stand by the door as they depart. When a quiet or non-participative student is leaving, I'll quickly ask that student something relating to his information sheet.

6. To connect the course with *other courses* that students are taking in the same term.
One question on the information sheet asks students for their current class schedule. I make note of other courses that students are taking and attempt to relate material in the FYE seminar to their other courses. For instance, when I'm covering mnemonic devices in the seminar, I will use examples for improving memory that apply to content they may be learning in their other classes.

7. To intentionally form *small groups* or *learning teams*.
For example, I may create homogeneous groups consisting of students with the same career interests, or heterogeneous teams comprised of students from different geographical areas or cultural backgrounds.

8. To *personalize written feedback* I give to students during the term.
For example, if a student initially expressed an interest in joining a student club or finding an on-campus job, I'll ask about that when I'm providing written feedback on a student's journal entry or one-minute paper.

9. To prepare for and personalize students' scheduled *office visits*.
I will look over a student's information sheet prior to an office visit and refer to something mentioned on the sheet during the student's office visit.

10. To personalize and enliven the process of *returning student assignments* in class.
Periodically, I look over my students' information sheets just before going to a class session when I'll be returning student assignments, and instead of calling out the names of students to come up and retrieve their assignments, I'll call out some piece of information I remember from their information sheet. For example, I might say: "Will a future occupational therapist from Maryland please come up and pick-up your assignment?" (This demonstrates to students at later points in the term that I still know them well.)

11. To *showcase articulate* comments and *insightful* ideas generated by students.
I will look for comments and ideas shared by students on their information sheet that may relate to a course topic and display them on a transparency when we get to that particular topic in class. For example, there is a question on the information sheet that asks students for their favorite quote. One student wrote: "When you point your finger at someone else, there are three fingers pointing back at you." This succinct saying artfully captured the gist of projection—a defense mechanism that I cover in class under the topic of self-efficacy. When I reached the point in the course when I discussed that defense mechanism, I created an overhead transparency that contained the student's quote along with her name and used it to introduce the concept of projection. This practice serves to validate students' ideas, plus I've found that students really seem to get a charge out of being quoted; perhaps it makes them feel like an important person whose ideas are worthy of public announcement and consumption.

12. To personalize *test questions* that I use on *exams*.

I use the information sheets to construct test questions relating to individual students' interests. For instance, in a first-year seminar test covering the topic of major/career choice, I include student names on questions that relate to their particular major or career interest (e.g., "Jennifer P. is interested in both Art and Business, so she decides to major in Art and minor in Business. Approximately how many courses in Business will she need to complete a minor in this field?").

Conclusion

It's been my experience that when students are aware that you care about them, they care more about you and what you're trying to teach them. Caring about your students also tends to help them become more intrinsically motivated, more actively involved in the learning process, more willing to take intellectual risks, and more likely to respond positively (less defensively) to your constructive feedback. The student information sheet has proven to be my most effective strategy for demonstrating to students that I care about them as individuals. It has proven to be well worth the "sacrifice" of lost content coverage on the first day of class because it creates a much more favorable first impression of the course than rushing into the course content. It is also a teaching tool that has the versatility to be used in multiple ways—throughout the term—to connect students with the course material, with the course instructor, and with their classmates.

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Appendix B

THE ONE-MINUTE PAPER:
An Efficient & Effective Strategy for Promoting Students' Active Involvement and Personal Reflection

Introduction

A "one-minute paper" has been defined as a very short, anonymous, in-class writing activity (taking one-minute or less to complete), whereby students respond anonymously to an instructor-posed question that is designed to provide the instructor with feedback about student learning. This strategy was originally developed by a Physics professor at the University of California, Berkeley (cited in Davis, Wood, & Wilson, 1983), then popularized by Cross and Angelo (1988) as one of a wide variety of quick "classroom assessment techniques" (CATs) designed to provide instructors with anonymous feedback on what students are learning in class. For example, students may write a one-minute paper in response to such questions as, "What was the most important concept you learned in class today? Or, "What was the 'muddiest' or most confusing concept covered in today's class?" While one-minute paper was originally designed to assess student learning at the end of a day's lesson, it may be adapted for use at times during class and for other purposes. For instance, instead of being used to provide feedback to the instructor about whether students have mastered a course concept, one-minute papers may be used as a learner-centered reflection strategy to help students actively discover personal meaning in a concept covered in class, and to build instructor-student rapport. Furthermore, students do not always have to write one-minute papers anonymously, and they do not always have to be assigned at the end of class. Described below are: (a) a variety of different *questions* that may be used as prompts for minute papers, (b) the *times* during a class period when one-minute papers may be solicited, and (c) the multiple *advantages* associated with minute papers.

Potential Purposes of One-Minute Papers & Purpose-Related Questions

Assessing ***Student Interests***:
* Without looking at your notes, what *stands out* in your mind or remains *most memorable* or about today's class?
* What was the most *surprising* or *unexpected* idea you heard in today's discussion?
* Looking back at your notes, what would you say was the *most stimulating* idea discussed in class today?
* For you, what interesting *questions remain unanswered* about today's topic?

Identifying ***Perceived Relevance*** of Course Concepts
* In your opinion, what was the *most useful* idea discussed in today's class?
* During today's class, what idea(s) struck you as things you could or should *put into practice*?
* What *example or illustration* cited in today's class could you *relate to* the most?

Assessing Student ***Attitudes/Opinions***
* Would you agree or disagree with the following statement made in today's class. . . .? (Why?)
* What was the most *persuasive or convincing argument* (or counterargument) you heard expressed in today's discussion?
* Was there a position taken in today's class that you strongly *disagreed* with, or found to be somewhat *disturbing* and *unsettling*?
* Were there any ideas expressed in today's class that caused you to *reconsider or change* your personal opinions, viewpoints, or values?

Checking ***Student Comprehension***
* What did you perceive to be the major *purpose or objective* of today's class?
* What do you think was the most *important* point or *central* concept covered today?

Assessing ***Conceptual Connections (Cross-Concept Integration)***
* Did you see any *relationships* between today's topic and other topics previously covered in this *course*?
* What was discussed in class today that seemed to *connect* with what you're currently learning or previously learned in *other course(s)*?

One Minute-Paper Questions for Triggering Different Forms of Higher-Order Thinking

Application (Applied Thinking): putting knowledge into practice to solve problems and resolve issues.

Trigger Questions:

- How can this idea be used to _____?
- How could this concept be implemented to _____?
- How can this theory be put into practice to _____?

Analysis (Analytical Thinking): breaking down information into its essential elements or parts.

Trigger Questions:

- What are the main ideas contained in _____?
- What are the important aspects of _____?
- What are the key issues raised by _____?
- What are the major purposes of _____?
- What assumptions or biases lie hidden within _____?
- What were the reasons behind _____?

Synthesis: integrating separate bits or pieces of information to form a more complete product or pattern.

Trigger Questions

- How can this idea be joined or connected with _____to create a more complete or comprehensive understanding of _____?
- How could these different _____be grouped together into a more general class or category?
- How could these separate _____ be reorganized or rearranged to produce a more comprehensive understanding of the "big picture?"

Multidimensional Thinking: thinking that involves viewing ourselves and the world around us, from different angles or vantage points.

Trigger Questions

- How would _____affect different dimensions of myself (e.g., emotional, physical, etc.)?
- What broader impact would _____ have on the social and physical world around me?
- How might people living in different times (e.g., past and future) view _____?
- How would people from different cultural backgrounds interpret or react to _____?
- Have I taken into consideration all the major factors that could influence _____ or be influenced by _____?

Inferential Reasoning: making arguments or judgment by *inferring* ("stepping to") a conclusion that is supported by empirical (observable) evidence or logical consistency.

Trigger Questions for supporting conclusions with *empirical (observable) evidence*:

- What examples support the argument that ____?
- What research evidence is there for ____?
- What statistical data document that this ____ is true?

Trigger Questions for supporting conclusions with *logical consistency*:

- Since ____ is true, why shouldn't ____ also be true?
- If people believe in ____, shouldn't they practice _____?
- To make the statement that ____, wouldn't it have to be assumed that ____?

Balanced Thinking: carefully considering reasons for and against a particular position or viewpoint.

Trigger Questions

- Have I considered both sides of _____?
- What are the strengths/advantages and weaknesses/disadvantages of _____?
- What evidence supports and contradicts _____?
- What are the arguments for and the counterarguments against _____?

Trigger Questions for **Adduction**— arguing for a particular idea or position by supplying supporting evidence.

- What proof is there for _____?
- What are logical arguments for _____?
- What research evidence supports _____?

Trigger Questions for **Refutation**—arguing against a particular idea or position by supplying contradictory evidence.

- What proof is there against _____?
- What logical arguments indicate that_ _____ is false?
- What research evidence contradicts _____?
- What counterarguments would provide an effective rebuttal to ____?

Critical Thinking: making well-informed evaluations or judgments.

Trigger Questions for Thinking Critically about *Validity (Truthfulness):*

- Is _____true or accurate?
- Is there sufficient evidence to support the conclusion that _____?
- Is the reasoning behind _____strong or weak?

Trigger Questions for Thinking Critically about *Morality (Ethics):*

- Is _____fair?
- Is _____just?
- Is this action consistent with the professed or stated values of _____?

Trigger Questions for Thinking Critically about *Beauty (Aesthetics):*

- What is the artistic merit of _____?
- Does _____ have any aesthetic value?
- Does _____contribute to the beauty of ____?

Trigger Questions for Thinking Critically about *Practicality (Usefulness):*

- Will _____work?
- How can _____ be put to good use?
- What practical benefit would result from ____?

Trigger Questions for Thinking Critically about *Priority (Order of Importance or Effectiveness):*

- Which one of these _____ is the most important?
- Is this _____the best option or choice available?
- How should these _____ be ranked from first to last (best to worst) in terms of their effectiveness?

Creative Thinking: generating ideas that are *unique, original, or distinctively different*.

Trigger Questions

- What could be invented to _____?
- Imagine what would happen if _____?
- What might be a different way to _____?
- How would this change if ____?
- What would be an ingenious way to _____

Times During the Class Period when One-Minute Papers may be Solicited

There are three key times or junctures during the class period when one-minute papers may be used effectively: (a) at the *end* of class, (b) at the *start* of class, and (c) in the *middle* of class. One-minute papers are typically used at the *end* of a class to have students reflect back and think more deeply about the most important concept discussed in class that day. Asking for a one-minute paper at the end of class provides a meaningful sense of "closure" to the class session and helps students reflect back to the major point or issue addressed in class, thereby increasing the likelihood that they will "consolidate" it into long-term memory. A number of research studies indicate that if students engage in a short review of material presented to them at the end of a class period, they retain almost twice as much of its factual and conceptual content when tested for it at a later point in time (e.g., two months later) than they do without any end-of-class reflection (Menges, 1988).

One-minute papers may also be used at the *start* of class to activate or "turn on" ideas and feelings that students may already have about the material to be covered in the upcoming class. For example, if the topic is "Stress," students may be asked the following questions: (a) "When you hear the word 'stress,' what immediately comes to mind?" (b) "In 3-4 sentences, tell me what you know about 'stress'?" or (c) Is there anything in particular about 'stress' that has always interested or intrigued you?" Anticipatory questions such as these serve to activate students' prior knowledge and beliefs about the topic to be covered prior to coverage of it, thereby preparing and prompting the brain to make connections between ideas it is about to process and ideas that it has already stored. One-minute papers completed in advance of a course topic also provides with early feedback about students' prior knowledge, preconceptions, or misconceptions about the topic, which the instructor can use to build on their existing knowledge base and dismantle erroneous preconceptions.

One-minute papers may also be solicited *during* the class period, especially just after discussion of a key point. This serves to trigger student reflection on that point before another point is introduced, and it also serves to interrupt or "punctuate" the class presentation with an exercise that has students *act* on and *do* something with the ideas they are hearing. Mid-class interruption of teacher discourse with an action-oriented task serves to keep students more alert and more mentally active during class, and it intercepts the natural attention "drift" that takes place when students process information for an extended period of time. Research indicates that student attention during lectures is strengthened when lectures are periodically interrupted by short pauses lectures that encourage active thinking—for example, by simply asking students to "tear out half a sheet of paper and write your reaction to the presentation thus far" (Bligh, 2000).

Using one-minute papers does not have to be a time-consuming or labor-intensive practice. They do not have to be used in each and every class session to be effective. The benefits associated with one-minute papers may be reaped by using them in about 50% of class meetings in the FYE course (Cuseo, 2007a). Also, the instructor's written remarks in response to students' minute papers do not have to be extensive. No more than one minute needs to be spent on responding to each student's one-minute paper, and if the instructor is pressed for time, a very brief note may be delivered to half of the students in class (e.g., students with last names from A-M), while reserving more extensive responses to the other half of students in class (last names from N-Z). On the next one-minute paper, the process can be reversed, with more extensive responses provided to those students who received shorter responses on the previous minute paper.

One-Dozen Purposes & Advantages of the "One-Minute Paper"

The one-minute paper is a very efficient and versatile instructional strategy, with multiple advantages that traverse cognitive, affective, and social dimensions of the learning process. Described below are twelve major advantages of the one-minute paper.

1. One-minute papers can provide a *"conceptual bridge"* between successive class periods.

At the beginning of class, a quick review of student responses to a one-minute paper answered at the end of a previous class can provide an effective link or segue to the upcoming class session.

2. One-minute papers can improve the quality of *class discussions* by having students write briefly about a concept or issue before they begin discussing it.

Using one-minute papers in this manner works to the benefit of reflective students by allowing them the opportunity to gather their thoughts prior to verbalizing them. It also benefits students who are apprehensive about public speaking by giving them a script to fall back on (or build on) and use as a support structure for communicating their ideas orally. Instructors can also use this "anticipatory" type of minute paper can also be used to activate students' interest and perceived relevance of a topic before it is discussed in class (e.g., "Why do you think this upcoming topic is worthy of our discussion?")

3. One-minute papers are an effective way of involving *all* students in class *simultaneously*.

Asking all students to respond with a one minute-paper question ensures *equal* participation of all class members, including those students who may be too bashful or fearful to participate orally. This sends a message of *high expectations* to all students in that each student is expected to participate and has something important to contribute—no matter what their cultural background or level of academic preparedness. To ensure equal opportunity for participation after class discussions, students can complete a one-minute paper in response to the following question: "During our class discussion today, what thoughts came to your mind that you did not get the opportunity to share verbally?" (At the start of the next class period, the instructor can share with the class any insightful response to this question that was written by a verbally reticent student, which shows that student that her idea was worth hearing and may reduce some of her reticence about expressing her ideas during future class discussions.)

4. One-minute papers can be used to stimulate and facilitate discussion of *diversity*. While reading students' minute papers, the instructor can look for thematic or distinguishing patterns in the responses of students of different age, gender, ethnic background, or national citizenship. These group-response patterns may be shared with the whole class at the start of the next session, and students could be asked how they would interpret or explain the differences (and similarities) among the responses of various groups.

5. One-minute papers can be used to promote *class attendance and attentiveness*.

Students may be awarded points for their one-minute papers, which count toward their course grade; if they miss class, they lose the points. Students may be allowed a "free" or "forgiven" one-minute paper per term, so if they are absent on a day when a one-minute papers was assigned, they will not lose those points. Students who are in class for all papers receive extra credit for the one "free" minute paper that they were entitled to, but did not use.

Although one-minute papers may not be assigned in every class period, they can still function as a type of "pop quiz" that may "pop up" in any class at any time. For readers familiar with Skinnerian principles of positive reinforcement, periodically assigning one-minute papers in this manner serves to reward students on a "variable schedule of reinforcement," which is known to produce high response rates—in this case, high attendance rates. Furthermore, students are rewarded for actually doing something in class, rather than merely "showing up." Thus, students are rewarded for their participation in class, and since attendance is a precondition or prerequisite for this participation, they are also indirectly rewarded for coming to class. In contrast, most class-attendance policies do not positively reinforce student attendance; instead, they use negative reinforcement by penalizing students for missing class—i.e., by taking points away from them.

6. One-minute papers can be used to promote student *punctuality*.

One-minute papers may be solicited at the very start of class to encourage punctuality and discourage tardiness. If a student is not in class at the time the question is asked, he cannot answer it and gain the points associated with it.

7. One-minute papers can be used as a "writing-to-learn" strategy that promotes *writing-across-the curriculum*.

The one-minute paper may be viewed as a focused writing assignment that promotes reflection and deeper thinking in the college classroom than that which occurs when students take lecture notes in a harried and non-reflective manner. To help develop their writing skills, instructors can insist that one-minute papers be written in complete sentences. Before assigning the first one-minute paper of the term class, I point out to students that a major purpose of this exercise is to develop their writing skills because the quality of their writing and quality of their

thinking are interrelated. When the one-minute paper is read, spelling and grammatical errors, but do not subtract points for such mistakes. However, students may lose points if they do not attempt to use complete sentences. Instructors can refrain from subtracting points on their first "offense;" instead, they could just point out that what the student should do next time. A "repeat offender" may be given one more reminder about not using complete sentences, and warned that full credit will not be awarded for a third offense. This practice has effectively encouraged students to put effort into their in-class writing, without causing them to feel unduly threatened or unfairly penalized in the process. Naturally, instructors should also attempt to write positive responses to students whose answers are particularly well written or whose writing has improved.

8. When viewed collectively, one-minute papers can function as an ongoing *learning log* or *learning journal.*

Students may be asked to complete successive one-minute papers on the same piece(s) of paper, so by the end of the term, they have a consecutive series of entries that approximates a learning log or journal. This also allows students the opportunity to conveniently review their previous responses, along with the instructor's responses to them, which can sometimes help students see connections across course concepts and help them prepare for exams.

9. One-minute papers can be used to *personally validate* students. It is not uncommon to find an example or experience cited in a student's paper that poignantly illustrates a course concept. For example, if I ask for an anticipatory one-minute paper before beginning a new topic, I'll jot down insightful student responses on a post-it sticker and quote the student when I get to that point in class. (Naturally, I select quotes that are poignant and powerful, but not personal.). Students are often touched by this practice because it reinforces their written contribution and validates them as individuals. I also think that this practice serves to model thoughtful student answers for other students to emulate, perhaps encouraging them to write in a similar fashion.

Periodically, when I receive an especially eloquent or insightful response from a student following discussion of a course topic, I'll include the student's quote and name on an overhead transparency and project it at the start of the next class period. This has turned out to be a particularly potent way to validate students; I've noticed that they often seem to be visibly flattered when they're publicly recognized and when they see their name and words "published" and showcased on screen.

10. One-minute papers can help you identify your *most important or significant* course concepts by encouraging you to step back and ask, "What is the most important idea or message that I want students to think about before they leave class today?"

One-minute papers have encouraged me to think more carefully about how to *prioritize* course content and to identify *"core" concepts* that I want students to reflect on deeply via one-minute papers. Occasionally, when I ask students if they've ever experienced or observed an example of a key concept presented in class, their minute-paper responses provided me with outstanding illustrations of course concepts that I've since built into my class notes and used in my class presentations. When I use any of these student-generated examples in my presentation, I mention to the class that they were provided by former students. Acknowledging that the example is a student example almost always seems to heighten class interest, and I think demonstrates to them that I really listen to and value students' ideas.

11. One-minute papers can help the instructor learn *student names* if (a) students are asked to come to the front of the room individually to turn in their papers at the end of class sessions, and (b) students are called individually by name to come up and retrieve their papers at the start of a class session.

I use one-minute papers more frequently at the beginning of the term, not only to get students in the habit of regularly coming to class, but also to help me learn their names more rapidly. At the start of the term, I intentionally assign one-minute papers at the very end of class and allow students to leave the classroom as soon as they finish writing. Individual students invariably take different amount of time to finish their papers, so they do not all exit the room at the same time. When students come up to hand-in their one-minute paper, it gives me the opportunity to view student faces and names (written on the minute paper) simultaneously, which expedites my learning of student names. Moreover, at the start of the following class session, I call students by name to come up individually to pick up their one-minute papers from me, which further strengthens my memory of their names and faces.

12. One-minute papers serve to build *instructor-student rapport.*

When students get their one-minute papers back, they see that I have responded personally to them. I always address the student by name in my written response, and I sign my name at the end of my comments, so that the

communication approximates or simulates a personal letter. This enables me to build instructor-student rapport, primarily because the one-minute paper is not an assignment asking for students to give a correct answer or perform an academic task proficiently; instead, they are being asked to share their personal perceptions and experiences. Such questions are non-threatening and the responses students provide are conducive to my providing a personal reply. (In contrast to tests and term papers, where I must make evaluative comments on the validity of their answer to justify the grade I've given.) I have found that students will often respond honestly and poignantly to course concepts when their responses are not evaluated for their factual accuracy or conceptual validity, but for their personal meaning and authenticity.

For instance, I was once discussing the concept of defense mechanisms, and I gave a one-minute paper at the end of class that asked students if they had ever witnessed or experienced any of the defense mechanisms discussed in class today. Many of their responses involved sharing personal experiences or the experience of close family members. In my response to their papers, I express my appreciation for their willingness to share this information with me, and in some cases, I shared a similar experience of my own. Other times, I may write back with a short question about their shared experience, asking them to elaborate a bit on it when they submit their next one-minute paper. (On several occasions over the years, students have also used the one-minute paper to convey a "call for help," which alerted me to connect them with a relevant support service or support person.)

Such personal sharing through minute papers can allow instructors to get "closer" to their students and communicate with them on a more personal and humane basis, which can foster a distinctively warmer and deeper learning experience for students the first-year seminar.

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