

critical links: A professional inquiry process

2A.1

Selecting an Issue: How do I give myself some direction?

Issues for Inquiry

1. Before you begin brainstorming, prime your brain by taking several mental inventories. Consider the following:
 - What puzzles you about teaching and learning and the interactions you have with students?
 - What classroom issues "bug" you or what parts of teaching eat up your time without much reward or usefulness?
 - What do students do well in your class and what don't they do well?
2. Begin writing your issues on paper as fast as you can. Pour ideas onto the page without judging their merit. When you have 10 or more issues, you may stop, unless you would like to add more.
3. Once your list is complete, circle the three issues that most interest you.
4. Meet with a partner. (This exercise will work best in pairs, but triplets are workable.) Take turns talking about the three issues you each circled. For each issue explain:
 - What the issue means to you and what aspects you would study
 - How knowing more or examining the issue closely might help teaching and learning in your classroom
 - What information you might gather and consider to help you to think more deeply and concretely about the issue

When you have exhausted an issue, ask your partner what s/he thinks. Jot down any ideas your partner has about the issue that interest you.

5. When you have finished discussing all three issues, ask your partner which one appears to have the most energy for you. Which issue made your voice become more animated? Which issue made you gesture more? Which issue made you physically and emotionally more enthusiastic?
6. Consider the information from your partner. Does it correspond to how you feel? If it does, you have selected an issue. If it does not, consider your partner's feedback and your own feelings and select the issue that most interests you to work with for right now. You may change your issue at any time during these exercises.
7. Record your issue in as clear and concise language as you can right now. Proceed to the next activity, *Framing a Question*.

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2A.2

Framing a Question: How do I narrow my focus?

Stems are words used to begin questions. Working with the issue you selected in the previous activity, come up with as many questions about it as you can using the following stems. Work quickly without evaluating or editing your responses. *Some stems will work better than others depending on your issue. The point is not to use every stem but to generate as many questions as possible using the stems that work for your issue:*

1. How do/does
2. Why would
3. What happens when
4. What is the role of _____ in _____
5. What is the difference between _____ and _____
6. What causes
7. How much

When you have generated as many questions as possible using these stems and your issue, read through all the questions and circle the three that most interest you. Meet with a new partner and discuss why each of these three questions interests you.

When you finish discussing a question, ask your partner for his/her ideas about it. Jot down any ideas your partner has that might be helpful to you in thinking more deeply about that question. With the help of your partner, select the one question that most interests you. Even if you are not perfectly happy with your question, settle on it for right now.

Your question will take many shapes and may even change completely during the course of your inquiry. This question, the one you chose at this moment, is only a place to start.

The only "rule" at this moment is that you should not be able to answer your question with a "yes" or a "no." It should begin with the words, "what, how or why." These words will call for discussion or explanation and send you off on an investigation. You will learn from the investigation, not just trying to find the answer to a "yes" or "no" question.

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2A.3

Considering Feasibility: Is my question "do-able?"

1. Consider your question. Look at it from all angles. What student learning is involved? What instruction and/or curriculum are involved? What information would you need to begin to answer it? You may not need formal, numerical data—unless you think it will shed light on your question. Information is any and all bits and pieces of evidence that will help you answer your question. Now, consider the following three questions:

a. What information do you need to answer this question? List all the different types of information that might be helpful.

(One source of information to answer your question must come from your students. To truly improve classroom practice, teachers need to consider how or what their students are learning or thinking. If your question doesn't require you to examine student learning, you may want to reconsider it at this point.)

b. Who has that information?

(Other than your students, are there resources or people who have information that will relate to and help you answer your question?)

c. How will you get that information?

- Will you need to survey your students? Yes No
- Will you need to observe them at work? Yes No
- Will you need different collections of their work to examine? Yes No
- Will you need to do all three above? Yes No
- What survey questions will you ask your students to get useful information from them?
- Will you need to create a checklist if you observe students at work? Yes No
- What kind of student work and how many collections will you need to examine?

2. Consider the answers to the three questions above (a, b and c):

- Is your inquiry question do-able with your students in the context of your classroom?
- Will you be able to get the information you listed?
- Do you have access to the resources and people who have the information?

If the answer to any of these questions is no, can you re-frame your question so it is more feasible? Whether you answer yes or no at this point, proceed to the next activity. It may help you re-frame your question if you think it isn't feasible at this point.

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2A.4

Checking *Critical Links*: What does research say?

Critical Links is a summary of arts education research in which you may find no questions with a direct relationship to yours or you may find someone has pursued your exact question. The point is to see what is known and if what is known can inform your inquiry study.

1. Look over the index of research topics from *Critical Links* and find studies that have some similarity (however distant or close) to yours. You might consider looking for studies in your curricular or arts area, studies with student populations like yours or ones with similar questions. Select five or six studies and look them up. Read the information about them either in the hard copy edition of *Critical Links* or by downloading them from the web site. (<http://www.aep-arts.org>.) From your reading, select two research studies that pertain to your question in some way.
2. Take brief notes and summarize the research studies or photocopy them and highlight the important aspects of each study.
3. Meet with a partner. Explain the *Critical Links* studies you found and how they might inform your thinking. Ask your partner for his/her ideas. Does s/he see anything you've missed in these studies? With the help of your partner, consider these questions:
 - Is there any way I should re-shape my questions based on these studies?
 - Is there information in these studies that I should consider as I conduct my inquiry?
 - (If you thought your question was not feasible) Is there any way, based on information in these studies, to reshape my question so it is feasible?

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2A.5

Screening the Question: Will my question advance my teaching?

The most important step in any inquiry is making sure you have a *strong* question that is *suitable* for study. You've consulted the research in *Critical Links*, but there are other screens to help you determine if your question advances teaching and learning in your classroom before you invest hours in gathering evidence to answer it. As in life, there are no guarantees, but up-front work on your question may save you hours of despair later. Here's the final step in selecting your question.

In *Sharing Perspectives*, an activity from the first step in Creating a Learning Community, you used summaries from the resource section. (Best Practice Teacher Standard, INTASC Teacher Standard, Instructional Strategies that Increase Student Achievement, National Staff Development Council Standards, and Thirteen Principles of Best Practice) These summaries focus on important issues in education. They can be helpful in determining whether your question will strengthen your skills as a teacher in the contemporary classroom. Return to those summaries now and re-read them.

1. Can you find your issue somewhere in one of them? Is your question related to or part of one of the concepts in one of these summaries?
2. Meet with a partner and explain where and how you see your question in relationship to one of the concepts in one of these summaries. If your question has no relationship to any of the concepts or ideas in these summaries but you are committed to it, discuss with your partner exactly how your question will advance your teaching practice and why you think it is significant.

Congratulations! If you and your partner agree your question has significance because it is related to an important contemporary issue in education or you can explain how it will advance your teaching practice, you have a *strong* question that is *suitable* for inquiry.

2R.1

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2R.2

Critical Links Question Index by Discipline

DANCE

Question

Pages Description of Group Studied

Can a program that integrates poetry making with creative movement enhance creativity (originality, fluency, and flexibility) in children with behavioral disorders?	6-7	2 boys, ages 7 and 10, in a residential treatment program
Can dance instruction improve non-verbal reasoning?	2-3	Meta-analysis of 7 studies
Can dance instruction improve reading?	2-3	Meta-analysis of 7 studies
Can first-graders' reading abilities be improved through a dance program in which children learn to use their bodies to physically represent letters?	10-11	174 elementary students in three predominantly low-income, African American population schools, who studied for 3 months
Do kinesthetic and visual-spatial intelligences rely on similar or distinct cognitive processes	14-15	57 female subjects, from 9 to 25 years old, with histories that included dance, athletics or neither
Does motor imagery ability increase with dance expertise?	14-15	57 female subjects, from 9 to 25 years old, with histories that included dance, athletics or neither
How does dance instruction affect self-perception and social development for at-risk and incarcerated adolescents?	12-13	60, 13-17 year old incarcerated adolescents studied dance for 10 weeks
How does participant/observation research by undergraduates in a dance-centered service-learning project affect perceptions of the purposes of arts generally and dance specifically in the undergraduates' and the lives of others?	12-13	60, 13-17 year old incarcerated adolescents studied dance for 10 weeks
Is motor imagery a core operation of kinesthetic intelligence?	14-15	57 female subjects, from 9 to 25 years old, with histories that included dance, athletics or neither
Is there a relationship between dancing and creative thinking?	8-9	286 high school students studied dance for one semester
What are the unexpected outcomes of a program that integrates poetry making with creative movement for children with behavioral disorders?	6-7	2 boys, ages 7 and 10 in a residential treatment program
What effect on creative and critical thinking abilities does a program of creative or traditional dance instruction have on seventh-grade girls?	4-5	78 7th grade girls took dance for a total of 8 weeks

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DRAMA

Question

Are children's reading comprehension, expressive fluency, and attitudes toward reading affected by a year of periodic dramatic coaching based on texts?

Can a creative drama program with an emphasis on specific social and oral language skills lead to increases in the social and oral language skills for children with learning disabilities?

Does a program of creative drama integrated with children's literature contribute to the growth of reading comprehension skills of fifth-grade remedial reading students?

Does adult participation in thematic-fantasy play activities influence the outcome of thematic-fantasy play training?

Does classroom drama help students develop verbal ability? (The researcher created seven meta-analyses that considered nine related hypotheses related to type of plot, role of leader, degree of transfer, amount of drama instruction, age, type of population, study design, publication status, and publication date).

Does story dramatization enhance story comprehension among first-graders?

Does thematic play training facilitate children's immediate and maintained story recall?

Does thematic-fantasy play contribute to conflict-resolution skills?

Does training in imaginative play influence the imaginativeness of subsequent unstructured free play among kindergartners?

How do ethnically diverse students in an urban theater magnet high school work collaboratively to conceive of and write original theater pieces regarding topics of interest to them?

How do participants in the Shakespeare & Company program identify the value of their participation for themselves?

Pages Description of Group Studied

56-57 17 3rd and 4th grade students involved in a remedial reading program

20-21 35 5 to 11 year old children of diverse ethnic and cultural backgrounds

22-23 51 5th grade students in remedial reading classes

42-43 192 children in K and 1st grade, mostly African-American, high poverty rural school setting

46-47 7 meta-analyses of 80 studies

34-35 2 groups of 1st grades of unspecified size

42-43 192 children in K and 1st grade, mostly African-American, high poverty rural school setting

42-43 192 children in K and 1st grade, mostly African-American, high poverty rural school setting

24-25 36 kindergarten children

28-29 29 high school students

48-49 2 year program evaluation involving over 400 students in 10 schools, number of staff involved is unspecified in this summary

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How does role-play persuasive language compare to written persuasive language? (This is the "channel" comparison referenced in the title).	52-53	84 4th graders and 70 8th graders in a suburban school district
How is literacy used within dramatic play, and why?	26-27	17 pre-school children: 1 African-American, 1 Asian, 15 white, 12 girls, 5 boys, from 5 to 6 years old
To what extent does the informational status of a listener (whether familiar or not familiar with a story) affect a student's use of oral language to retell the story? (Do students use effective and appropriate language when told in advance the knowledge base of the listener?)	44-45	108 students (54 girls and 54 boys) ranging from kindergarten through 2nd grade
What are the effects of drama (defined in this study as "being and doing within an imaginary situation") on fifth- and sixth-graders' language development?	50-51	280 students in 11 classes of 5th and 6th graders in public and private schools in Tasmania
What are the effects of drama on the development of moral values?	50-51	280 students in 11 classes of 5th and 6th graders in public and private schools in Tasmania
What are the effects of role-playing on subsequent persuasive writing among fourth- and eighth-graders?	52-53	84 4th graders and 70 8th graders in a suburban school district
What are the effects of thought-organizing activities involving drama on narrative writing in comparison to traditional pre-writing, planning activities?	32-33	63 2nd and 3rd grade, lower middle class, white students
What are the effects of thought-organizing activities involving drawing on narrative writing in comparison to traditional pre-writing, planning activities?	32-33	63 2nd and 3rd grade, lower middle class, white students
What are the impacts of drama on the development of informational language, expressive language, and interactional language?	50-51	280 students in 11 classes of 5th and 6th graders in public and private schools in Tasmania
What are the relative effects of three modes of story reconstruction training, thematic-fantasy play, teacher-led discussion, and drawing, on the development of children's story comprehension?	38	108 children in grades K-2, 18 boys and 18 girls in each of the three grades, rural school setting
What behaviors within fantasy play activities (playing out roles and scenes in a story) contribute to the development of story comprehension skills among kindergarten children?	54-55	120 kindergarten students in 6 classrooms

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What elements of the programs seemed most critical to creating those benefits	48-49	2 year program evaluation involving over 400 students in 10 schools, number of staff involved is unspecified in this summary
What factors influencing how literacy is used within dramatic play are important?	26-27	
What happens when an academically diverse classroom of 8- and 9-year olds makes a transition from a traditional "round-robin" reading program to one involving the creation of and performing in a classroom theater where children are encouraged to consider and enlist multiple forms of expression?	56-57	17 3rd and 4th grade students involved in a remedial reading program
What is the effect of a six-week poetry/drama workshop on: the willingness of students to communicate orally; their oral communication skills; their feelings at the time of oral presentation; and their self-confidence and self-image?	30-31	27 sophomore high school students in a rural high school
What is the impact of adult-led training in imaginative play on specific cognitive developments of kindergartners in contrast to two alternative conditions: (1) supervised but unguided free play, and (2) routine attendance in a kindergarten class?	24-25	36 kindergarten children
What is the relationship between kindergartners' use of symbolic expression (mainly the use of spoken words) in free play and their ability to generate isolated written words (an inquiry with implications for success in writing)?	40-41	65 kindergarten students, 37 males and 28 females in a rural school setting
What specific elements of role-playing are reflected in subsequent persuasive writing?	52-53	84 4th graders and 70 8th graders in a suburban school district
With what relative effectiveness can children's use of oral language (retelling stories to non-familiar listeners) be facilitated through the use of alternative interventions, namely discussion, drawing, and dramatic play?	44-45	108 students (54 girls and 54 boys) ranging from kindergarten through 2nd grade

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Multi-Arts

Question

Question	Pages	Description of Group Studied
Are students who are involved in extracurricular arts activities less likely to drop out of middle or high school than those who are not involved in the arts?	80-81	392 male and female high school students followed from 7th to 12th grade
Did the Arts in the Basic Curriculum (ABC) project affect test scores in non-arts subjects?	90-91	Multiple sources of data
Do artistically talented students use more self-regulation strategies (such as paying attention and persevering) when they are in classes that integrate the arts with academics than when they are in traditional classes?	64-65	Fourth, fifth and sixth grade students in New York City Schools
Do arts-rich schools have different climates than arts-poor schools?	66-67	2,406 fourth, fifth, seventh and eighth, grade students in 18 public schools
Do children in arts-rich schools show more creativity and higher academic self-concept than those in arts-poor schools?	66-67	2,406 fourth, fifth, seventh and eighth, grade students in 18 public schools
Do high school seniors who have been highly involved in the arts at least since eighth grade perform better academically than students who have not been involved in the arts? And what academic achievement patterns are associated with intensive involvement in theater and in music?	70-71	3,720 in the top and 3,720 in the bottom quartiles of 14,880 Sr. High students
Do low-SES urban public school students in schools that integrate arts and academics (through partnerships with teachers and artists) perform better on standardized test than do students who are in schools that do not integrate arts with academics?	72-73	Students in grades 3, 6, 8, 9, 10 and 11 at a number of arts involved and control schools
Do low-SES, at-risk students who are intensively involved in the arts through after-school organizations perform better in school than those who are not so involved?	78-79	143 students participating in at least one of a group of 48 arts-based after-school organizations over an eleven-year period
Do students in middle and high school who have high involvement in the arts perform better than those with low arts involvement on a variety of academic indicators? And if so, does this relationship hold up when the sample is restricted to students from the lowest SES quartile in the United States?	68-69	As many as 31,500 eighth through tenth graders, including one group selected for low SES
Do they learn more academic content in arts-integrated lessons?	64-65	Fourth, fifth and sixth grade students in New York City Schools
Do they show gains on standardized academic tests as a result of	64-65	Fourth, fifth and sixth grade students in New York

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Question

Question	Pages	Description of Group Studied
learning in arts-integrated classes?		City Schools
Does involvement in the arts in secondary school boost general academic performance?	76-77	Multi-year study of 158 high school students in 5 UK schools
How does the A+ model of comprehensive school reform compare with national standards for school reform by Shields and Knapp?	86-87	Multiple sources of data
Is involvement in the arts associated with lowered high school dropout rates?	74-75	Survey of 40 students at-risk for dropping out of high school, and classroom observation of eleven high schools students engaged in arts classes
Is there a correlation between arts study and academic achievement? Does academic achievement improve when students are exposed to the arts?	92-93	31 studies with multiple outcomes selected from a body of 1,135 studies
The A+ program evaluation addresses four key questions arising from its comprehensive school reform strategy and its belief that the arts are fundamental to how teachers teach and how students learn.	84-85	Multiple sources of data
What effects does the A+ schools program have on schools, communities, teachers, and students?	88-89	
What is the evidence that learning in the arts leads to creative thinking skills?	82-83	8 studies selected
What is the relationship between SAT scores and the number of years of arts study? Which SAT test is more strongly associated with studying the arts: the verbal or the math? Are the relationships stronger for different arts disciplines?	96-97	Over 10 million high school students
When elementary school students form a company to write and produce an original opera, what kinds of learning take place? For example, do students become more persistent workers and do they become better at solving problems in groups?	94-95	Elementary school students

Music

Question

Question	Pages	Description of Group Studied
Can listening to music help motivate emotionally disturbed students to improve their writing skills?	118	2 fourth grade boys
Can understanding of fractions and ratios be enhanced by a training method consisting of a combination of a spatial-temporal	110-111	136 2nd graders at an inner-city school

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Question	Pages	Description of Group Studied
math video game and piano keyboard training?		
Do children write better when listening to either calm or exciting music than when they write in silence?	112-113	54 children in 2, 5th/6th grade mixed classrooms
Do gender and/or music backgrounds influence the effects of an integrated reading and music instructional approach on fifth-graders' reading and music attitudes and achievement?	102	
Do performing songs on guitar and singing boost self-esteem and self-efficacy in at-risk youth (in comparison to therapeutic treatments that do not include performance)?	119-120	45 boys ages 8 to 19 living in residential treatment centers
Does active instruction in music enhance preschool and elementary students' performance on spatial tasks?	114-115	3 meta-analyses conducted on a set of 15 studies
Does individual instruction on piano keyboards, supplemented by group instruction in singing, cause long-term enhancement of spatial-temporal reasoning in preschool children?	124-125	42 boys and 36 girls, ages 3 and 4 received 6 to 8 months of music instruction
Does level of academic achievement in French and mathematics affect the degree to which students increase their learning of a second language and of music when music is incorporated into the second-language classroom?	121-123	53 Canadian 2nd graders
Does listening to background music while thinking about mathematics problems enhance mathematics ability?	130-131	Meta-analysis of 25 studies
Does music instruction cause increases in mathematics achievement?	130-131	Meta-analysis of 25 studies
Does music listening enhance performance on spatial-temporal tasks?	116-117	Meta-analysis of 26 experimental studies
Does music training not involving the keyboard enhance spatial-temporal, mathematical, and verbal reasoning?	104-105	70, 4 and 5 year old preschoolers, for 30 weeks
Does the addition of piano keyboard training make a difference in math outcomes?	110-111	
How effective is "contingent" music (music used as behavioral reinforcement) in facilitating learning and behavior changes in education and therapy settings?	128-129	Meta-analysis of 98 studies
Is there a relationship between music instruction and performance in reading? Does music instruction lead to enhanced reading ability?	106-107	Meta-analysis including 30 studies

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Question

Question	Pages	Description of Group Studied
Is there a relationship between music study and mathematics achievement	130-131	Meta-analysis of 25 studies
What are the effects of an integrated reading and music curriculum on fifth-graders' reading achievement, reading attitude, music achievement, and music attitude?	102-103	29 fifth grade students, 11 girls and 18 boys, for 11 weeks
What circumstances affect music's reinforcement value in education and therapy settings?	128-129	Meta-analysis of 98 studies
What is the effect in a public school setting of group music instruction that features learning to play a keyboard instrument on kindergarten children's spatial reasoning?	126-127	62 kindergartners of mixed genders and multiple ethnicities at two elementary schools. Two lessons per week for eight months.
What is the effect of three years of piano instruction on children's spatial-verbal and quantitative skills?	108-109	43 fourth-grade children selected to receive three years of piano instruction
When incorporated into an elementary, second-language classroom (French for second-graders) does a music program whose methodology is based on similarities between the structures of music and language reinforce both the learning of music and the learning of the second language?	121-123	53 Canadian 2nd graders

Visual Art

Question

Question	Pages	Description of Group Studied
Can art instruction by itself improve reading?	138-140	9 study meta-analysis
Can reading skills be enhanced by instruction in visual arts?	138-140	10 study meta-analysis
Can sixth-grade students' understanding of history be assessed through a combination of writing and drawing, and does this kind of assessment reveal more history knowledge than assessments that ask only for writing?	141	98 randomly selected sixth grade students

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Can the visual arts be used to help reluctant, learning-disabled readers begin to enjoy reading?	144	2 7th grade boys
Does the opportunity to show understanding through drawing along with writing particularly help students with limited English skills	141	20 of the 98 were "limited English-ability students"
Is teaching reading through art more effective than teaching reading alone?	138-140	4 study meta-analysis
When children, aged 9 and 10, are trained to look closely at works of art and reason about what they see, can they transfer these same skills to a science activity?	142-143	162 9 and 10-year old students

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