

Faculty Survey about General Education Requirements in Science and Math at DePauw



How important is it for undergraduate non-science majors to learn science/math content (important concepts, facts, knowledge, etc.) versus science/math skills (understanding the process of science and research, interpreting graphs and data, etc.)? (Please select one response below that best matches your perspective.)

		Response Percent	Response Count
Learning skills is more important than learning content.	<div></div>	30.8%	12
Learning skills is a little more important than learning content.	<div></div>	30.8%	12
Learning skills and learning content are equally important.	<div></div>	33.3%	13
Learning content is a little more important than skills.		0.0%	0
Learning content is more important than learning skills.	<div></div>	5.1%	2
Please explain your response:			29
answered question			39
skipped question			2

Page 3, Q1. How important is it for undergraduate non-science majors to learn science/math content (important concepts, facts, knowledge, etc.) versus science/math skills (understanding the process of science and research, interpreting graphs and data, etc.)? (Please select one response below that best matc...

1	Content is important to have informed citizens. Skills are important to understand how that content is acquired. Science is about both, but I think students are best served by having at least some "work experience" in scientific methods.	Nov 7, 2013 4:51 PM
2	Having the skills will allow students to apply scientific reasoning to situations they encounter. They will eventually forget much of the content.	Nov 7, 2013 11:25 AM
3	The skill they learn should allow them to independently learn the "content". E.g. they don't need to learn the specifics of climate change, but they should know how to read about and interpret the information using the skills they have gained (interpreting data, dealing with complexity and dynamic processes).	Nov 7, 2013 11:03 AM
4	Critical thinking is vitally important no matter the field but also being science literate so they can make educated decisions through out their life on science related issues.	Nov 7, 2013 10:26 AM
5	Depending on the importance of a topic to a student its likely that content will be forgotten in less than a year or even less than a semester after having been exposed to it. It seems likely that skills will lat longer although I have no data to support that statement.	Nov 5, 2013 8:34 AM
6	Skills are much more important than content because 1) content changes with better scientific understanding of the world and 2) content is best learned through appropriate application of skills. HOWEVER, I don't think skills can be taught in the absence of content. Also, there are different kinds of content. Concepts are much more important than facts, although the misapplication of facts often mares understanding.	Nov 4, 2013 1:06 PM
7	I'm going middle of the road because so many of the courses serve a dual purpose as general education and as gateway courses to the major. Depending on the reason the student is taking the course may make skills more important versus content and vice versa.	Nov 4, 2013 11:35 AM
8	Content provides a baseline. Without it, skills cannot be acquired, or if they are, they are poorly informed, making their application even worse than before. Non majors taking introductory courses are trying to grasp the language of a particular field, i.e., content. It makes little sense for them to become "critical thinkers" when they lack content to think about.	Nov 4, 2013 11:19 AM
9	I think that one is kidding oneself if we think that you can learn skills without content. To me, the best context for learning skills includes important content in the field in which they are studying.	Nov 4, 2013 10:43 AM
10	content knowledge fades away with time. And sometimes, not that much time.	Nov 4, 2013 9:05 AM
11	some content is unlikely to change. folks with skill can understand new content	Nov 4, 2013 8:57 AM
12	Skills more than content. Most students are going to be consumers, not producers, of information. Thus, knowing how to interpret, etc., is much more important.	Nov 4, 2013 8:23 AM
13	If students understand the skills, especially in data analysis, they will be able to	Nov 4, 2013 7:02 AM

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	critically understand the validity (or invalidity) of future "scientific" work.	
14	This can be an obvious argument, but I believe to be a productive citizen you ought to understand how science should work otherwise, how can you critically evaluate or ask yourself questions regarding these topics (regardless of your personal beliefs).	Nov 3, 2013 11:14 AM
15	Content changes faster than skills. An emphasis on skills (working within a given context or set of content) will better prepare students to address the issues they will face during the rest of their lifetime.	Oct 31, 2013 4:55 PM
16	The non-science majors will not remember much of the content- the science majors struggle to remember content. The process is more important.	Oct 31, 2013 12:52 PM
17	See my comments about outcome in the previous response.	Oct 31, 2013 11:42 AM
18	Few students will remember much specific content, apart from a few basic concepts, but if they develop the skills to work with the concepts, they should be better able to pick up more content later as needed.	Oct 31, 2013 10:36 AM
19	Skills are the take away in some sense, what can best serve them later. But I think it is equally important for students to understand how scientists use those skills to develop what becomes facts and knowledge and I see no meaningful way to make the skills stick without some content. But I don't have a particular minimum list of content. I have a minimum length/depth to that list of content but I am comfortable with it being in any field because no matter how carefully we select are minimum content I know there is always something else important that we couldn't fit. Learning not only skills but how to learn content by actually learning a certain amount of some content is important. I can't preference either skills over content or vice versa.	Oct 31, 2013 9:30 AM
20	The content will be forgotten before they graduate, but the skills will be helpful throughout their lives in areas that are not even science-related.	Oct 31, 2013 9:19 AM
21	I feel skills won't mean anything in a few years after learning them if they are not used.	Oct 31, 2013 9:18 AM
22	I think the experience of learning scientific (or mathematical) facts, theories, and concepts is important. But I think that learning to interpret many kinds of data, ask critical questions about how the data were gathered, and relate results to theory is even more important, and possibly more easily transferred across fields.	Oct 31, 2013 9:15 AM
23	Realistically, much content is lost over time -- for non-majors and majors. If we can instill critical skills that students continually apply in the future, then I believe we'll have a larger positive impact. At the same time, I recognize that depth and/or breadth of content is often necessary for students to acquire (or perhaps even recognize) relevant skills.	Oct 31, 2013 9:13 AM
24	How to think like a scientist is most important in my opinion and a good way to model that is to have a laboratory experience in the gen ed requirements.	Oct 31, 2013 9:01 AM

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Content is important, but increasingly there is too much content for any student to know but if we teach them how to approach a problem scientifically, they will know where to find the facts/content

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| 25 | I'm not even sure I'd call it "skills" so much as understanding the science process that I'd prioritize. They need to become informed consumers of science information; at the same time, you can't be completely content-free in science! A single discipline-based, science literacy-oriented course should certainly introduce the most significant content in the field, but instructors must be pretty brutal about subordinating the urge to tell everything *they* find important about their field to the goal of developing students' ability to cope with math and science. | Oct 31, 2013 8:52 AM |
| 26 | I actually consider content more important, but don't know how that could be implemented. And in addition, I know arguing for content is a losing battle these days. | Oct 31, 2013 8:27 AM |
| 27 | Obtaining the skills is more likely to result in generalization of skills than is learning content apart from skills | Oct 31, 2013 8:19 AM |
| 28 | Content evanesces quickly; one hopes that skills stay around longer. | Oct 31, 2013 8:14 AM |
| 29 | Learning skills with no context (content) is probably impossible. | Oct 31, 2013 8:03 AM |