

## ***Introduction to the Instructor Version***

We hope that you will take the time to read this Introduction in which we will describe the journey that has produced this work. ***In fact, in many ways this Introduction may be the most important chapter for you to read.*** Why? Because part of what we hope you will take away from this tutorial is the knowledge and skill to be able to mold *our* work in such a way that it works best for *you*. That may come as much by listening in as we relate our own professional development process over the next several pages as it does by reading along with the student about the DEAL Model for Critical Reflection that our journey produced.

One of us (Sarah) is a nutritionist by training, so a diet-related analogy comes to mind. There are myriad weight loss books on the market in which the first half is filled with justification for the diet that follows. Many people jump straight to the diet, with the mindset of “just tell me *what* to eat for the next 6 weeks, don’t tell me *why* I should eat it.” Unfortunately, after 6 weeks of following exactly what the book says, whatever weight is lost will usually begin to be re-gained. That’s because the dieter doesn’t know how to apply the diet’s underlying principles to her own life – her specific likes and dislikes, her time constraints, her goals, etc.

The same dynamic applies here: you will likely get a more significant and lasting benefit from this material if you have a good understanding of the *underlying principles* that grew out years of defining and refining the goals and objectives we had for our students’ service-learning (SL) related reflection. Rather than using the DEAL reflection model for awhile, only to discard it if doesn’t quite fit your specific situation, we hope that you can use the approaches we have taken to developing the model in the first place to improve on it, tailoring it to your own “likes and dislikes, time constraints, goals, etc.”

In addition, while at first glance the tutorial may appear too elaborate, too structured, or too time consuming as compared to what you have been doing, if you share our desire to implement service-learning in such a way as to produce significant learning and service outcomes then the description of what we have learned through refining the work will resonate with you.

In particular, if you want more than just dry summaries of what your students are doing in the community, more than diffuse streams-of-consciousness, more than venting about social problems or the challenges of group work, then you stand where we have stood and may value what we have learned about how to get that “more.”

Finally, it is most important to us that you not simply ask your students to “**do the tutorial.**” Just as service-learning is the *integration* of service and learning rather than the addition of service to learning, so too is its reflection component best implemented in an **integrated** way. For you to do that effectively, you need to understand the why’s and wherefore’s of this model. This Introduction should help put you in the position to take full advantage of the *Notes to Instructors* that accompany each chapter.

## Reflecting on your own situation

Take a moment before we continue and consider the challenges you face or, if this is your first time teaching with service-learning (SL), might face in generating and assessing student learning.

- Linking the SL project to your course content?
- Tapping the civic learning potential of SL?
- Getting anything of value from reflection?
- Not knowing whether or how to grade reflection products?
- Push back from students that reflection is just busy work or too “touchy feely”?
- The sense that your students are learning but the inability (yours or theirs) to express what that learning is?
- Concern that they aren’t, in fact, learning through SL, at least not in terms of the content of your course?

If you are interested in building your own capacity to deal with these challenges effectively, in using them to stimulate your own role as an educator, and/or in turning these challenges of practice into questions for scholarly examination, then we have much in common. Our journey is grounded in these and other challenges and, equally importantly, in the opportunities that accompany their solutions. We invite you to look for points of connection between your own situation and our journey, using each to enrich understanding of the other.

## How our journey began

We think it is important to acknowledge up front that the journey to where we are today with respect to our understanding of and approaches to critical reflection in SL began with being told that the Service-Learning Program we led (which at that time was barely a year old) was going to need an **assessment** strategy. While many view assessment as, at best, a necessary evil, we came to embrace it as a way of thinking about teaching and learning that made us better teachers, our students better learners, and our program itself stronger. More generally, assessment became an important driver that helped us to advance both theory and practice in the service-learning field.

Initially, our assessment office offered to help develop a strategy, proposing a variety of student outcomes to be measured by 4 standardized inventories, 2 sets of student essays, in-class focus groups, and comparisons between SL-enhanced and non-SL-enhanced courses. After picking our collective jaws up off the floor, we asked if we could develop our own approach, to which the answer, thankfully, was “by all means yes.”

So we set off to do just that. What little we had found in the SL literature on assessing outcomes tended to rely on students’ **testimonials** and **self-reports** to assess the quality of their learning and the meeting of learning objectives. But as Eyler (2000) had indicated, assessment through self-report can lead to a confusion between **student satisfaction** and **student learning**. We wanted to be able to demonstrate the latter, especially in light of our desire to grow our nascent program and our goal of adhering to high academic standards in its work.

Not insignificantly, we realized that concrete evidence of significant student learning outcomes would be needed in order to recruit additional faculty to the pedagogy and to gain the support of academic leaders on campus. This all meant that we needed to develop a way for students to demonstrate, not merely report, their learning and a corresponding way to assess that learning.

### **A strong foundation with one important weakness**

Our Service-Learning Program had actually been built around a structured reflection process developed by several undergraduates in conjunction with one of us (Patti). We realized from the beginning that students would not learn maximally simply by having experiences in the community; rather, *learning would be generated through reflection*—reflection guided in accordance with the defining learning goals of service-learning: academic and civic learning and personal growth.

Therefore we developed a reflection framework (drawing on Pam Kiser’s “Integrative Processing Model,” 1998), a series of questions to guide students through written or oral reflection on their SL-related experiences in each of these 3 categories of learning. The framework (using the structure we have come to call DEAL) began with prompts to help students Describe their experiences, then Examine them from the perspective of each category of learning; in the last step of this process students wrote 1-2 page reflection products called Articulated Learnings (ALs) in which they responded to 4 questions:

- What did I learn?
- How did I learn it?
- Why is it important?
- What will I do in light of the learning?

By their very design, the ALs should have been capable of giving us a good indication of what students really were learning through reflection on their SL experiences. In addition, all SL-enhanced courses being supported by the program at the time were requiring these written products; thus we had a readily available *course-embedded* approach to assessment that did not require instructors to assign additional work or administer special tests or inventories.

But **what** did we want them to learn? Or, more precisely, **how** did we want them to **think**, since we were not after particular answers but rather ways of thinking about academic material, citizenship, and personal growth. This turned out to be a difficult question to answer and a key weakness in the original reflection framework, at least from an assessment perspective. The program had a set of learning “objectives” within each category of learning (academic, civic, personal growth) that had been written during its creation. Unfortunately they spoke primarily of wanting students to *appreciate, understand, experience, and reflect on* certain aspects of their SL-related activities. Few were written in a way that would allow us to judge directly the quality of the learning being expressed in the ALs. We needed objectives written in assessable language that would capture the quality thinking that we wanted. For us, Bloom’s Taxonomy (1956)<sup>1</sup> provided that language.

On the next page is a table that outlines the 6 levels of the taxonomy, what is being asked of the student that is relevant to our work at each level, and the associated “action” verbs.

Bloom Classification	What is being asked of the student	Examples of Learning-Related Behaviors
Knowledge	<i>Remember and recall</i>	<u>Identify, define, list, state, label</u>
Comprehension	<i>Demonstrate understanding</i>	<u>Explain, restate, summarize</u>
Application	<i>Apply knowledge to situations</i>	<u>Apply, use, solve, choose, predict</u>
Analysis	<i>Break ideas down into parts</i>	<u>Analyze, compare, contrast, categorize</u>
Synthesis	<i>Put ideas together into something new</i>	<u>Synthesize, develop, propose, formulate</u>
Evaluation	<i>Make a judgment and defend it</i>	<u>Evaluate, assess, judge, recommend</u>

We were fairly quickly able to convert our initial objectives into ones that began with appropriately assessable verbs such as identify, define, explain, analyze, and evaluate, and we thought we were home free. Then we started systematically reading the ALs produced across multiple courses. It did not take long before we realized just how much of a disconnect there was between what we thought we wanted the students to learn and the learning they were expressing in their written reflection products. We now knew better what we wanted in the way of student learning outcomes, but how could we help our students achieve those outcomes?

### “Ah ha” moments large and small

We spent the next several years engaged in a continuous process of reflecting on our reflection process, and then reflecting on that reflection – reading hundreds of ALs along the way in addition to writing our own, in order to help us better understand why there were such significant gaps between expectation and reality.

Early on we noted how often students’ thinking was limited to the learning of a fact or led them to suggest overly simplistic causes of or solutions to complex societal problems. We even encountered some very “bad” learnings – the kind that make you wonder if service-learning is doing more harm than good by reinforcing stereotypes, for example, or failing to challenge problematic interactions between students and community members. We realized that we needed to provide the students (as well as their instructors) with more help in **guiding their thinking** and their articulation of the resultant learning than we were providing through the initial reflection framework. Doing that required that we more carefully and deliberately consider the learning objectives themselves and that we better integrate our reflection and our assessment processes.

Over time, we came to two important realizations about our objectives. First, assessable verbs, by themselves, don’t help if neither we nor the students know what they mean. For example, if we wanted them to be able to *analyze* the emergence of an academic concept in the community, we and they both needed to understand that this meant *comparing and contrasting* the concept as presented in the text and as enacted in the community; and if we wanted them to *evaluate* that concept then we and they both needed to understand that this meant considering the reasons *why* a particular academic concept played out differently in their service-related experience than they had thought it would and how those reasons might lead them to critique either the concept or their understanding of it or its use in the community. That need to be more precise and to be on the same page with our students led us to develop more detailed prompting questions.

The second realization had to do with the **hierarchical** nature of the taxonomy from which the objectives and the associated reflection prompts were created. Its highest level – evaluation, or making a reasoned judgment – is where we wanted our students to end up when we asked them, in the Articulated Learning step that concluded the reflection process: What did you learn? But we realized that they couldn't get there unless they had done the thinking in the levels below. You can't effectively *apply* something unless you have already *identified* and *explained* what it is you are applying, and you can't *analyze* its sources or potential alternatives to it until you have your mind around a good example (*application*) of it. And you certainly can't make a reasoned judgment about it without having done the *analysis*. We needed to help them get to the higher levels of learning we were after, meaning that we needed reflection prompts that were targeted, explicitly and step-by-step, to these levels.<sup>2</sup>

After many iterations, and many more mini-epiphanies, we created a set of learning objectives for each of our categories of learning – personal growth, civic learning, and academic enhancement – arranged in the hierarchical fashion of Bloom's Taxonomy. As you will see in Chapter 4 and again in Chapters 6 - 8, these objectives explicitly guide the students to ever higher levels of reasoning as the move through the structure of prompts that compose the DEAL model; specifically, the Examine step supports the students in identifying, explaining, applying, and analyzing new understandings they are developing, and the Articulate Learning step helps them synthesize and evaluate their learning.

You may decide to rework these objectives and their associated prompting questions to better suit your and your students' interests and needs – perhaps aiming for application or analysis rather than evaluation, or perhaps defining learning at each of these levels differently than we do, or perhaps creating learning objectives that integrate two or more categories of learning (for example, academic and civic).<sup>3</sup> We will be making suggestions to support your customizing the material here, as appropriate, in the *Notes to Instructors* that start each chapter.

### One more realization

While we were developing the learning objectives and associated reflection prompts, all the while continuing to read students' written reflection products, we realized that Bloom's Taxonomy alone is not sufficient to ensure high quality thinking. You can *identify*, *explain*, *apply*, *analyze*, etc. **poorly**: making assertions without evidence, wandering away from the primary learning, failing to consider the complexity of the issues, or not considering multiple perspectives, for example.

In other words, although using the hierarchically-expressed learning objectives as a way to guide learning could help steer students away from the simple learning of a fact, it could not address all of the shortcomings in their thinking that we had been seeing from the outset. They could still learn problematic things or even nothing at all; their reasoning could still be weak.

To address this problem we turned to one more established educational tool: **The Standards of Critical Thinking** from the Critical Thinking Foundation.<sup>4</sup> This set of standards, developed by Paul and Elder (2002), serve as an important check on the quality of thinking, helping students to develop learnings that are, for example, accurate, clear, and relevant and that take into account complexities and multiple perspectives; they thus play an important role in *deepening* learning and can also be used to assess learning, in grading or research. They will be described in greater detail in Chapter 3.

Using the Standards of Critical Thinking in conjunction with prompts structured in accordance with the hierarchically-expressed learning objectives is, we have found, a strong approach to critical reflection. In this way we are able to use critical reflection to *generate*, *deepen*, and *document* significant learning and we are able to *assess* that learning.

Again, you may find other ways to use these standards, including other ways to combine them with the reflection framework. As indicated earlier, we will be making some of our own suggestions in the *Notes to Instructors* that start each chapter.

## A final epiphany

As noted by Howard (1998), service-learning is a *counter-normative* pedagogy. Students are asked to develop their own ideas and insights based on unique experiences outside of the classroom and they are invited to use their learning in ways that impact others. A mini-mutiny in one of our (Patti's) courses brought forcefully and very effectively to our attention the many ways in which learning through critical reflection on experience is not what our students are accustomed to or confident in; they have to learn how to learn this way, just as we have to learn how to teach this way.

While the learning objectives and critical thinking standards are designed to provide a structure for learning through reflection, the students helped us realize that we needed to give them *guided practice* in undertaking this unfamiliar activity—we needed to help them make the “shifts in perspective and practice” (Clayton & Ash, 2005) that are required for and fostered by learning through service-learning.

Hence the creation of this tutorial, designed not only to support them in the process of critical reflection, but also to make the learning process itself more transparent—to help them learn how to learn. And also, hence the creation of the Instructor's version of the tutorial, designed not only to support you in supporting them through the process of critical reflection, but also to make the teaching process itself more transparent—to *help you help them learn how to learn*.

Students are helped further by “homework” assignments at the end of every chapter to reinforce its key concepts, along with “checklists” for them to use as a way to make sure they are including all aspects of the thinking we are looking for as they write their reflective essays. Note that you can use these checklists for **formative** or **summative** assessment as well.

The *Notes to Instructors* that accompany each chapter in the tutorial will include further lessons we have learned about the implications of the counter-normative nature of service-learning in general and of learning through critical reflection in particular and some suggestions for activities we have found helpful in building students' capacities as learners.

## Closing thoughts

Underlying the journey we have shared here is the realization that **when what “we” say isn't what “they” do**, sometimes the problem is that *we* really do not know what we want (although we may recognize it when we see it); *we* don't articulate what we want clearly enough for the students to understand; and/or *we* have not provided the support for them to be able to do it. The DEAL model,

its associated tools and rubrics, and this tutorial itself are our attempts to address these problems and to do so in a way that invites our students into a parallel process of thinking about thinking (their own and others) and of growing in their own capacities as learners.

At first glance, the reflection model presented here may seem at times to be rigid or perhaps too much like “teaching to the test.” As we will show you throughout, the model is more flexible than it may appear and there are plenty of opportunities for you to adapt and customize it to meet your needs. However, also note that the structure is there to help us model, not what to think, but *how* to think – something that is not easily “explained” and is perhaps better internalized through guided practice.

In other words, if we want our students to think critically about their own growth, about citizenship, and about the content of our courses, then perhaps we need to give them practice in doing just that; the structure of the DEAL model makes very explicit and walks them through what is involved in such thinking, with the intent that over time their reasoning abilities will become more and more fully developed. Ultimately, we think this is a *good* test – a test of reasoning that is rooted in established educational theory and practice – so “teaching toward it” does not trouble us.

We hope that by giving the opportunity to *practice* thinking in this way, we will have built the capacity of our students to take greater responsibility for their own learning in the future.

We invite you to join us in our ongoing *Scholarship of Teaching and Learning* journey, thinking about your teaching and the associated learning process in a rigorous fashion and making changes in the former to improve the latter. Regardless of how you decide to use the tutorial, we hope it provides some insights into how you might enhance your approaches to teaching and learning.

The remainder of this introduction provides an overview of the tutorial’s structure and some suggestions for how you might use it. Each chapter of this Instructors Version includes *Notes to Instructors* that provide further guidance, including suggestions for activities to reinforce the concepts being presented and sample answers to homework questions.

- **We have written the *Notes to Instructors* with the assumption that you have read each tutorial chapter first, giving you the frame of reference necessary to understand our comments .**

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## ***Brief Overview of this Tutorial***

*The first 5 chapters provide the foundation for using the DEAL model*

**Chapters 1 and 2** are not specific to the DEAL reflection model other than the way in which we set up, define, and reinforce the service-learning related learning categories. They introduce service-learning as a pedagogy (Chapter 1) and emphasize the importance of engaging in quality reflection when participating in it (Chapter 2). These are both short chapters and we have successfully assigned students to read them (and complete the associated “homework”) together.

**Chapter 3** applies an existing educational tool—the Standards of Critical Thinking from the Critical Thinking Foundation—to critical reflection. Many people have found this chapter to be very helpful on its own, well beyond its use with the DEAL model. You may want to start here to improve the quality of your students’ thinking and add the specific features of the DEAL model afterward.

- We have provided two different **rubrics** for assessing critical thinking at the end of the *Notes to Instructors* in this chapter. First there is a basic, 4-level holistic rubric that incorporate most but not all of the standards. The second, more detailed rubric, explains various levels of attainment of each standard and explicitly sets up two levels of assessment by separating the standards in a way that is described in greater detail in the chapter’s *Notes*. These rubrics can be used for formative as well as summative assessment of students’ work.

**Chapter 4** introduces students to the DEAL model for critical reflection: the 3-step model consisting of the Describe, Examine, and Articulate Learning steps. This is the model for critical reflection on which the rest of the tutorial is based. As we will discuss in the *Notes to Instructors*, DEAL can be used in a variety of ways, from quick in-class activities to the more extensive written reflection that Chapters 5, 6, 7, and 8 are designed to support.

- The chapter briefly introduces students to Bloom’s Taxonomy and its use in the DEAL model, material that will be reinforced as Chapters 6 – 8 guide them in reflection toward ever higher levels of the taxonomy.

**Chapter 5** introduces the first step of the DEAL model: Describe, which does not vary by category of learning goal. As with Chapter 3, you may find this material to be useful by itself, in this case for helping your students learn how to provide detailed, objective descriptions of their experiences.

- A **rubric** is provided for the students to assess their own writing that can be used by the instructor as well.

*The last 3 chapters are specific to the three learning goal categories of the DEAL model, separated out since the associated prompts vary.*

**Chapters 6, 7, and 8** present the Examine and Articulate Learning steps of the DEAL model by learning goal categories: Personal Growth (Chapter 6), Civic Learning (Chapter 7), and Academic Enhancement (Chapter 8).

- Each of these three chapters is meant to stand on its own and so can be used independently of the other two should you decide to focus on only a subset of the learning goal categories. They do, however, assume that the student has read the first 5 chapters of the tutorial. Because they are designed to be used by themselves, there is some repetition that cannot be avoided.
  - You will need to decide as you design your class how many of these essays, in which combination of learning goal categories, you want your students to complete. Some instructors focus on only 1 category in any given reflection activity, while others include 2 or all 3. Some instructors have their students use DEAL in each category only once, while others design into their courses opportunities for multiple uses of DEAL in each category.
  - You will also need to decide how much of the thinking supported by the DEAL model you want to see in writing. Some instructors ask their students to Describe and Examine their experiences orally and write up only the resultant AL(s), while others assign what we call “DEAL essays” in which all 3 steps are written.
- Each of these three chapters ends with a category-specific **rubric** or checklist for the students to use to assess the quality of their writing and that you can use for formative or summative assessment as well.

### ***Suggested Timeline for the Use of this Tutorial***

- Assign **Chapters 1 & 2** before the SL experience begins. Some instructors assign this material during the first week of class, as part of introducing the class to students; others prefer to focus initially on course content and then introduce the students to the SL component of the course further into the semester, at whatever point the SL project commences.
- Assign **Chapter 3** at any time, perhaps shortly before any reflection begins; you might also assign a written product first, then ask your students to read this chapter and critique the thinking demonstrated in their writing accordingly.
- Assign **Chapter 4** no more than 1 week before you will ask your students to begin reflection using the DEAL model.
- Assign **Chapter 5** when the SL experience begins, to help your students start off their service understanding the importance of being mindful of the details of their experiences.
- Assign **Chapter 6, 7, and 8** as desired. (Suggestions will be provided in each chapter as relevant). As noted above, this will depend on a variety of factors, such as:
  - *How frequently you plan on having students engage in reflection*
  - *Whether you plan to use all 3 categories or only a subset*

Whatever timeline you end up with for using the tutorial with your students, we strongly encourage you not to schedule reflection only at the end of the SL project or activity. Learning through reflection – and learning how to learn this way – takes time and, if undertaken throughout the SL project, can contribute significantly to the quality of both learning and service. Don’t lose this opportunity by holding off on reflection until the end of the semester.

## **General Thoughts on Using this Tutorial**

### As is or as a jumping off point

You may decide to use the tutorial as is – requiring that students purchase it – adding or subtracting material as appropriate to your situation as they go along, using some parts in class and assigning others as homework, instructing students to use parts of it in groups and other parts on their own, etc. We tell the students throughout that they might expect such modifications from their instructor. Suggestions for what you might do differently will be presented in the **Notes to Instructors** that accompany each chapter.

Or you may decide to use only the *ideas* and *approaches* presented here and adapt them to better suit your needs. In that case, buying the Student Version of this tutorial would not be appropriate for your students. We do ask that any material that is developed from this work include the following citation:

- Ash, S.L., Clayton, P.H., & Moses, M.G. (2009). *Learning Through Critical Reflection: A Tutorial for Service-Learning Students (Instructor Version)*. Raleigh, NC.

And we hope that you will share the material you develop with us, as an aid to our own ongoing learning and that of the field more generally.

### In close or more limited connection with a course

Our experience to date with this tutorial has been in the context of credit-bearing courses. That has afforded us the opportunity to reinforce in class what is being covered in the tutorial, including, for example, discussing the material in class (before or after assigning a chapter to be read), going over the Check Your Understanding sections that conclude each chapter in class (note that we have provided you with keys and/or sample answers at the end of the Instructor’s Notes), and using some of the tools (such as the Critical Thinking Standards table) in class.

However, if you are not able to offer support in the context of frequent classroom interaction, then it will be important to find another way to provide reasonably quick and meaningful feedback (e.g., through an on-line discussion forum) if your students are to get the full benefit of the model.

### As a part of the course structure and grade

The more critical reflection (and the tutorial as a resource that supports it) is integrated into your course, as opposed to being a peripheral activity, the more seriously students will take it. Especially given the counter-normative nature of learning through reflection, we have found that students need to be held accountable for actually engaging with the tutorial or they will not benefit from it, leaving everyone frustrated and unhappy. For us, that has often meant including their completion of the Check Your Understanding sections at the end of each chapter as a component of their final grade and assigning a fairly high value in the overall grading scheme of the course to the reflection products (DEAL essays or ALs) that the model produces. It has also meant devoting some time to the “shifts in perspective and practice” required and fostered by this type of learning, so that students are in a better position to value it and take it seriously.

In addition, depending on how you ultimately decide to use the DEAL model, we encourage you to consider carefully the need to trade-off time spent on other activities to ensure sufficient time to devote to the reflective process, including to capacity-building for learning through reflection. Throughout, we will provide suggestions for integrating critical reflection (including activities in this tutorial) into other class activities, to help minimize any sense you or your students may have of this work being “time off task.”

### *In assessing learning generated through reflection*

As we have said, we have developed rubrics that can be used by you and/or your students for assessing the quality of thinking demonstrated in the reflection essays (entire DEAL essays or ALs) that are based on both Bloom’s Taxonomy and the Standards of Critical Thinking. These can be used formatively to help students improve over the course of the semester and summatively to provide a score or grade.

We have used these tools in our research as a way to quantify results (see, for example, Ash, S. L., Clayton, P.H., & Atkinson, M.P. (2005). Integrating Reflection and Assessment to Improve and Capture Student Learning. *Michigan Journal of Community Service-Learning*, Vol 11, No 2.). They could also be used in course or program-wide assessment strategies to demonstrate the achievement of learning outcomes, again using ALs or other student products.

## ***A Note about the Student Examples Used in the Tutorial***

A key feature of any tutorial is examples—those that demonstrate what is being described and perhaps also those that do not. Therefore, throughout this tutorial we include student writing “samples” – from brief excerpts to complete reflective essays – to illustrate the concepts being presented. We need to make clear that, although each of these examples began as the actual work of our students (and is being used here with their permission), most have been edited to ensure that they represent, as clearly as possible, the point(s) they are used here to exemplify.

**Appendix:** The appendix contains examples of actual student ALs that were written using this tutorial from a Community Nutrition class. They may be helpful to you and the students as a way to better understand the type of thinking that the DEAL model can produce.

## Endnotes

<sup>1</sup> For more information on Bloom's Taxonomy go to:

[www.nwlink.com/~donclark/hrd/bloom.html](http://www.nwlink.com/~donclark/hrd/bloom.html)

<http://krummefamily.org/guides/bloom.html>

[http://en.wikipedia.org/wiki/Taxonomy\\_of\\_Educational\\_Objectives](http://en.wikipedia.org/wiki/Taxonomy_of_Educational_Objectives)

<sup>2</sup> Bloom's Taxonomy includes learning in three domains: cognitive, affective, and psychomotor. This Tutorial uses the Taxonomy of Educational Objectives in the Cognitive Domain, and, as noted, it assumes a hierarchical reading of the levels, which is not universally agreed upon (see, for example, Paul, R. (1993). *Critical thinking: What every person needs to survive in a rapidly changing world* (3rd ed.). Rohnert Park, California: Sonoma State University Press.). Bloom's work has been built upon in recent years, including among some scholars a re-ordering of the six levels in the cognitive domain such that synthesis is the highest level (see <http://coe.sdsu.edu/eet/articles/bloomrev/index.htm> for an example adaptation). We share our interpretation and its role in the design of this Tutorial and encourage you to develop the interpretations and materials most appropriate to your context.

<sup>3</sup> As one example, a group of faculty at NC State have designed (with Patti) a developmentally-structured, service-learning enhanced, interdisciplinary minor in Nonprofit Studies. Five learning goals (conceived as challenges facing leaders in the nonprofit sector) at the interface of academic enhancement and civic learning are integrated across the courses and provide the focus for critical reflection; one learning goal, for example, is "aligning mission, methods, and resources," and another is "balancing individual interests and the common good." For more information see Jameson, J.K., Clayton, P.H., & Bringle, R.G. (2008). Investigating Student Learning Within and Across Linked Service-learning Courses. In M. Bowden, S. Billig, & B. Holland (Eds.), *Scholarship for Sustaining Service-Learning and Civic Engagement* (pp. 3-27). Charlotte, NC: Information Age Publishing.

<sup>4</sup> For more information on the Foundation for Critical Thinking go to:

[www.criticalthinking.org](http://www.criticalthinking.org).

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