

LOGIC MODELS: EVALUATING EDUCATION DOCTORATES IN EDUCATIONAL ADMINISTRATION*

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Abstract

The author suggests the Logic Model, used especially in the Health Science field, as a model for evaluating the quality of the educational doctorate (i.e., EdD). The manuscript highlights the newly developed EdD program at Virginia Tech.



NOTE: This module has been peer-reviewed, accepted, and sanctioned by the National Council of Professors of Educational Administration (NCPEA) as a scholarly contribution to the knowledge base in educational administration.

THE EDUCATION DOCTORATE (ED.D.) LANDSCAPE

Over the last decade we have witnessed a noticeable increase in the number of colleges and universities offering programs in educational administration. Researchers (Creighton & Jones, 2001) identified over 450 universities offering masters and/or doctoral programs in educational administration and more recent studies (Golde & Walker, 2006) reveal a surge in Ed.D. programs in educational administration approximating 250 across the 50 states. Recently, several states that in the past permitted a select few universities to offer the Ed.D. (e.g., California, Kentucky, and others) have passed legislation opening the door for many other institutions to submit proposals to confer the Ed.D.. In California, for example, until recently only the University of California system (9 campuses) could offer the Ed.D. degree but under new law, institutions comprising the California State University (CSU) system (23 additional campuses) can submit Ed.D. program proposals to the California State University Board of Trustees. As of March 2008, seven CSU campuses have been approved in California for 2007-2008, with the remaining campuses scheduled so that all 23 campuses will by 2011 offer the Ed.D. (R. Papa, personal communication, March 21, 2008). This movement is somewhat paradoxical happening at the same time our loudest critic (Levine, 2005) is recommending the elimination of the Ed.D..

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The Carnegie Project on the Education Doctorate (CPED) is the most recent effort sponsored by the Carnegie Foundation for the Advancement of Teaching and the Council of Academic Deans in Research Education Institutions to strengthen the education doctorate. Approximately two-dozen colleges and universities have committed to working together to undertake a critical examination of the doctorate in education with a particular focus on the highest degree that leads to careers in professional practice. The intent of the project is to redesign and transform doctoral education for the advanced preparation of school practitioners and clinical faculty, academic leaders and professional staff for the nation's schools and colleges and the organizations that support them.

We all want effective doctoral programs for our aspiring and practicing school leaders. And we want to continually evaluate and assess those programs in regard to how well we are preparing educators with the terminal degree in our field. There are many effective models of program evaluation. The model I present in this chapter, though previously used primarily in the evaluation of federally-funded social programs, has applicability and usefulness in the evaluation and assessment of the education doctorate. Beyond suggesting the effective use of logic models, I detail their actual use in the assessment of a newly designed EdD at a major research university.

EVALUATING THE SUCCESS AND EFFECTIVENESS OF ED.D. PROGRAMS

Hopefully, it is not necessary to detail the purpose and need for sound program evaluation. Good evaluation plans not only provide evidence of whether or not the program is working but also provide the opportunity to improve the quality of the program on a continual basis. Ed.D. programs are no exception. It is the belief of this author (admitting a lack of empirical evidence) that one of the reasons our critics are so large in number and so frequent in their charges of mediocre programs at best (Levine, 2005), is due to our lack of substantive models for conducting Ed.D. program-level evaluation.

All too often, our approaches to program evaluation focus only on the inputs (i.e., resources) and outputs (i.e., number of graduates) and on occasion extend to outcomes (i.e., changes in participant behaviors, attitudes, knowledge, and skills) without assessing the impact of our program or the environment in which our university and doctoral student market exist. Most problematic is much evidence (found in personal external reviews of university Ed.D. programs and proposals in several states) that many of our Ed.D. programs either neglect program evaluation altogether or wait until the readying for the next National Council for the Accreditation of Teacher Education (NCATE) or Southern Association of Colleges and Schools (SACS) visit to implement a program assessment tool.

In a 2008 proposal to establish a doctoral program at Manhattanville College in Purchase, New York, the program coordinator and author of the proposal includes the following statements:

In the book, *The Assessment of Doctoral Education* (Maki & Borkowski, 2006) the authors make the point repeatedly that program evaluation/assessment is rarely done well, and is often not done at all. We thus have very little information about how effective doctoral programs are in preparing doctorates for short- and long-term career success. Our ignorance on these matters and the lack of comprehensive national data is particularly surprising because there is so much interest on the part of those who fund doctoral education. . . , as well as employers, universities, and students. (Willis, 2007, p. 88)

Though our field of educational administration may be guilty of not taking seriously the need for high quality, rigorous and systematic Ed.D. program evaluation, I suggest we are at a "tipping point" (Gladwell, 2002) and must make an attempt to remedy the situation quickly. I say this for two important reasons. First, with the recent increase in university Ed.D. programs I believe the negative reputation advanced by critics of the Ed.D. as a haven for mediocre doctoral students (Murphy & Vriesenga, 2004) will grow without a focused commitment to program quality and continuous improvement. And it is well-planned and systematic program evaluation that can provide the knowledge base from which to make decisions that lead to well-informed program goals and objectives.

Perhaps this position of responding to the critics and outsiders who make their assumption-based review of our doctoral programs in educational administration is more reactive than proactive. Nonetheless, we are under pressure to demonstrate the effectiveness and worth of our education doctorate and this pressure may be a blessing in disguise forcing us to address the issue of quality program evaluation. There is an urgent need for accountability informed by evidence that the Ed.D. is having measurable impact on school

improvement.

Secondly, as we shape our Ed.D. more toward a professional practice degree, our graduates must have experience and expertise in sound program evaluation. Many Ed.D. program curricula already have courses in program evaluation. There seems to be a disconnect here as we take seriously the need for our doctoral students to have instruction and expertise in program evaluation but we do not take quite so seriously the need for our program itself to engage in regular and rigorous evaluation. My point is there is an opportunity to combine purposes and objectives before us. I provide an example from the before-mentioned Manhattanville professional practice doctorate:

Because the Manhattanville College doctoral proposal is for a professional practice doctorate in a field where graduates must have expertise in program evaluation, we believe the best approach to this component of the program's operation is to make it a collaborative, participatory component that is integrated into the students' learning experiences. While students will not conduct all the assessment and evaluation procedures, they will be involved in all aspects of the evaluation/assessment process. (Willis, 2007, p. 89)

HISTORICAL CONTEXT OF PROGRAM EVALUATION

Although society has been involved in trying to solve social problems using some kind of rationale or evidence (i.e., evaluation) for centuries, formal program evaluation in the United States began with the ambitious, federally-funded social programs of the Great Society initiative during the mid- to late-1960s (W.K. Kellogg Foundation, 2007a, p. 4). But as resources and monies were infused into these programs, the social problems did not disappear. The public began to insist on evidence of the effectiveness of these programs before providing continued support and resources. "Systematic evaluation was increasingly sought to guide operations, to assure legislators and planners that they were proceeding along sound lines and to make services to their public" (Cronbach, 1980, p. 12). Because resources were limited, a basis was needed for deciding which programs to invest in.

Program evaluation as a distinct field of professional practice was born of two lessons: First, the realization that there is not enough money to do all the things that need doing; and second, even if there were enough money, it takes more than money to solve complex human and social problems. As not everything can be done, there must be a basis for deciding which things are worth doing. (Patton, 1997, p. 11)

While it may be true that many education doctoral programs do not take seriously the need for high quality regular program evaluation, there are a number of recent national and international studies that provide a basis for the development of effective Ed.D. evaluation models. Golde and Walker (2006) highlight the important component of program evaluation and assessment and recommend an extensive involvement of students in the program evaluation process with a "deliberate, evidence-based, holistic, self-reflective assessment process" (p. 75).

WHAT IS A PROGRAM LOGIC MODEL?

The work of the W.K. Kellogg Foundation provides practitioner-scholars in the field of educational administration with a practical, easy to use, and well-tested model for evaluating Ed.D. programs. The Foundation's W.K. Kellogg Foundation Evaluation Handbook (2007a) is a step-by-step manual for conducting program evaluations, and in which the concept of program logic model is introduced. The W.K. Kellogg Foundation Logic Model Development Guide (2007b), a companion publication to the Evaluation Handbook, focuses on the development and use of the program logic model.

The Foundation offers its experience and resources to increase the practitioner's voice in the domains of planning, design, implementation, analysis, and knowledge generation. They have found the logic model and its processes to facilitate thinking, planning, and communication about program objectives and actual accomplishments. The process of developing the model is an opportunity to chart the course. It is a conscious process that creates an explicit understanding of the challenges ahead, the resources available, and the timetable in which to hit the target (W. K. Kellogg Foundation, 2007b, p. 3).

To be more specific and get to the real meaning of logic models, the Foundation definition will be helpful here:

The program logic model is defined as a picture of how your organization (or program) does its work – the theory and assumptions behind the program. A program logic model links outcomes (both short- and long-term) with program activities/processes and the theoretical assumptions/principles of the program.

(W. K. Kellogg Foundation, 2007b, p. 4)

In general, logic modeling can greatly enhance the participatory role and usefulness of evaluation as a management and learning tool. Developing and using logic models is an important step in building program capacity and strengthening the voices of all involved. The ability to identify outcomes and anticipate ways to measure them provides all program participants with a clear map of the road ahead.

LOGIC MODELS MORE CLEARLY DEFINED

First, we must agree that effective program evaluation does more than collect, analyze, and provide data. Similar positions have been stated elsewhere (Creighton & Glenn, 2008). Data-driven decision making has been replaced with a new concept of evidence-based decision making. The point is that reacting to existing data is a first step, but more important are the investigation and reaction to below the surface or unreported data – evidence. Secondly, we see the real value of using logic models as providing the vehicle to assess continually and adjust continually (if and when needed).

Essentially, a logic model is a systematic and visual way to present and share your understanding of the relationships among the resources you have to operate your program, the instruction and activities you plan, and the changes or results you hope to achieve (W. K. Kellogg Foundation, 2007b, p. 1). The most basic logic model is a picture of how you believe your program will work.

The five steps or components are defined here as they pertain to an Ed.D. program. Resources include the human, financial, and organizational resources available to design the curriculum and activities and deliver instruction. Resources are sometimes referred to as inputs and include such things as: (1) a critical mass of qualified and experienced faculty, (2) travel funds for off campus programs, and (3) necessary technology to support the delivery of the Ed.D. program. It is important to recognize that in the evaluation of resources you also consider the balance of four organizational factors. Kaufman, Herman, and Watters (1998), in their landmark treatise on strategic, tactical, and operational educational planning present a model entitled focused on Strengths, Weaknesses, Opportunities, and Threats (SWOT). Strengths are important to consider: but so are weaknesses: Opportunities are essential but equally important to analyze are threats. Barriers, weaknesses, and threats might be such entities as negative attitudes from faculty, lack of resources from administrative units, or contextual factors within the larger community such as socio-economic, geographic, and/or political inequities.

Program Activities represent what the Ed.D. program does with the resources. Activities are the tools, events, and actions that are essential for the Ed.D. program implementation. These interventions are designed and used to bring about the intended program changes or results. Examples include (1) designing research and field studies to bridge the gap between theory and practice, (2) implementing advising and mentoring strategies to reduce Ed.D. time to degree and increase graduation rates, and (3) aligning courses and dissertation research with faculty interests and expertise.

Outputs are the direct and obvious products of the implemented activities and include such things as (1) satisfactory student grades, (2) number of students progressing through program benchmarks, (3) dissertation completion rates, and (4) graduation rates. In addition, outputs may be the number of classes taught, meetings held, or materials produced and distributed (W. K. Kellogg, 2007b, p. 8).

Outcomes, often confused with outputs, are the specific changes in the Ed.D. program participant's behavior, knowledge, skills, and habits of mind and are usually expressed at an individual student level. Faculty behaviors are an important assessment point, as well. Outcomes as opposed to outputs take considerable time to develop and are more complex and interdependent than the quantitative data typically collected and analyzed by departments of educational leadership and colleges of education. Where outputs are relatively easier to observe and measure (e.g., completion rates, GPAs, etc.), outcomes are more difficult to define and measure and often require more than traditional ways of assessment. For example, assessing habits of mind (dispositions) will likely require observing actual performance in the field over time rather than in the university classroom. Some examples of outcomes are (1) the Ed.D. student develops a commitment to improve teaching and learning in their schools, (2) the Ed.D. student displays an increased knowledge of using data to improve decision making, and (3) the Ed.D. student becomes more able to process multiple tasks and determine appropriate solutions.

Impacts are not often considered in most Ed.D. program evaluations because impacts generally take place

after Ed.D. graduates leave the university. We rarely conduct follow-up studies to observe and evaluate what our graduates accomplish years after they receive their degrees. Even more rare is the assessment of impact that faculty have on the effectiveness and improvement of the Ed.D. program. One might posit that impact is the essence of good evaluation plans and the only true measure of our success or failure in preparing school leaders who will make a difference in school improvement. Examples of impact might include (1) the Ed.D. graduate is directly responsible for the improvement of student achievement at their schools ; (2) through improved relationship with area schools, faculty have helped to improve the reputation and prestige of the Ed.D. program among school superintendents and communities; and (3) the Ed.D. graduate has moved into positions such as state superintendent of instruction, director of elementary or secondary education, or other positions impacting education policy. “Impacts are organizational, community, and/or system level changes expected to result from program activities, which might include improved conditions, increased capacity, and/or changes in the policy arena” (W. K. Kellogg Foundation, 2007b, p. 8).

HOW TO READ AND INTERPRET A LOGIC MODEL

Reading logic models is pretty straightforward with a left to right description of planning through results over time. Others have researched elsewhere the use of “verbal logic truth tables” in dealing with content and construct validity (Creighton, 1996; Coleman, & Adams, 2001), by setting up a form of reasoning that helps confirm similarity among descriptors within a known construct and to confirm discreteness among different constructs. The strategy used in verbal logic involves the use of “if...then...” statements. It is beyond the scope of this chapter to cover the use of truth tables in detail but a simple example will help set up my intent to connect the reasoning to the effective reading of program logic models.

Let’s suppose we want to use a survey instrument to measure a principal’s problem- solving skills. We would want to include more than one question on the survey that measures problem solving skills (usually 6-8 separate items on the survey). Here we will look at only two. For the sake of argument, let’s agree that problem solving skills can be demonstrated by a principal’s ability to (1) use innovation in solving tasks and (2) process multiple tasks simultaneously. Now, set up an “if...then...” statement using these two descriptors or look-fors.

If a principal uses innovation in solving tasks then he/she processes multiple tasks simultaneously.

If we agree with this statement, the two look-fors are likely related to problem solving and are two different ways of measuring problem solving. If we disagree with the statement, they are likely unrelated and might be measuring two separate constructs (e.g., problem solving and communication). The problem with using “if...then...” statements not in agreement is that survey responses are less reliable and can lead to incorrect hypotheses or conclusions.

The point is that the use of “if...then...” statements can help connect and confirm the logic and our understanding between concepts. Transferring this procedure to the logic model presented in Figure 1, the use of “if...then...” statements will help with the reading and understanding of the logic model, as shown in Figure 2.

Certain resources are needed to operate your Ed.D. Program	IF you have access to the resources, THEN you can use them to accomplish your Ed.D. planned activities	IF you accomplish your planned activities, THEN you are likely to deliver the new Ed.D. programmatic features	IF you deliver the new programmatic features, THEN your Ed.D. students will increase their level of functioning	IF doctoral students increase their level of functioning, THEN certain changes in schools, communities, and the level of teaching and learning might be expected to occur
Resources	Activities	Outputs	Outcomes	Impact

Table 1

Figure 2. How to Read and Interpret a Logic Model

The purpose of the logic model (W. K. Kellogg Foundation, 2007b, p. 3) is to provide faculty, doctoral students, and other stakeholders with a roadmap describing the sequence of related events connecting the need for the planned Ed.D. program with the program's desired results. Logic models help us visualize and understand how the human and financial resources can contribute to achieving our program goals and objectives which can lead to program improvements.

The Carnegie Project on the Education Doctorate (CPED) focuses on an underlying question: How do we create an Ed.D. framework for assessment and accountability that takes advantage of our diversity and yet helps us account for our efforts to reclaim education's doctorates within and across programs, strands, and institutions? The Project is using the logic model because they believe the answers to the above question are as follows:

1. Logic Models are built with the end in mind;
2. Logic Models change over the course of the project;
3. Logic Models are unique to each institution's project, but...
4. Logic Models provide a common framework, so...
5. Logic Models can help us document progress across institutions and across strands.

Reflecting on the end in mind (impact), we want to focus on how we can change our Ed.D. program design (outputs) that will lead to our outcomes (changes in student attitudes, skills, knowledge and level of functioning), to enhance educational practice, research, and ultimately, policy (impact).

DEVELOPING AN ED.D. PROGRAM LOGIC MODEL

As stated earlier, the logic behind the use of logic models is to define the results we desire first – Outcomes and Impact. Recall that impact is the fundamental intended change to occur in our Ed.D. program, our communities, and ultimately the improvement of teaching and learning at our school sites and outcomes represent those changes in the program participant's, both students and faculty, behavior, knowledge, skills, habits of mind, status, and level of functioning that we believe will lead to our desired impact. Figure 3 displays the Logic Model used at Virginia Tech in the redesign of the Ed.D. program in educational leadership and policy studies in conjunction with the Carnegie Project on the Education Doctorate.

A quote from Yogi Berra might be helpful here: If you don't know where you're going, how are you gonna' know when you get there? Educators have found the concept of backward mapping to be helpful in determining where we're going first, then deciding how we want to get there and how we will know when we get there. In using program logic models, deciding on your outcomes and impact first helps to create appropriate inputs, activities, and outputs.

There is much evidence (W. K. Kellogg Foundation, 2007b, p. 6) suggesting several benefits of program logic models. First, in the planning and designing phases of EdD programs, logic models help to find gaps in the theory and logic of a program and work to resolve them. For example, we found at Virginia Tech when thinking about impact that we were mistakenly viewing graduation rates as impact when in fact completion rates are at best only outputs. The logic model helped us to realize that we were missing measurements of outcomes and impact. Second, logic models help to build a shared understanding of what the program is all about and how the parts work together. As we begin to look at syllabi alignment with the Interstate School Leaders Licensure Consortium (ISLLC) standards, we realize the importance of the program contributing to student outcomes as a whole rather than by the contributions of individual courses (or faculty members). Third, the program implementation phase focuses attention on management on the most important connections between action and results. The implementation of early selection of academic advisors results in the creation of the Ed.D. student's program of study at the entry point rather than at the end of their program. Last, during the evaluation and marketing phase, logic models provide a way to involve and engage stakeholders in the design, processes, and use of evaluation.

Certain resources are needed to operate your Ed.D. Program	IF you have access to the resources, THEN you can use them to accomplish your Ed.D. planned activities	IF you accomplish your planned activities, THEN you are likely to deliver the new programmatic features (e.g., action-based research dissertations)	IF you deliver the new programmatic features, THEN your Ed.D. students will increase their level of functioning such as attitudes, behaviors, knowledge and skills	IF doctoral students increase their level of functioning, THEN certain changes in schools, communities, and the level of teaching and learning might be expected to occur
Resources	Activities	Outputs	Outcomes	Impact
			1. Ed.D. students will display an increased knowledge of using data to improve decision making.2. Ed.D. students will become more able to process multiple tasks and determine appropriate solutions.3. Ed.D. students will display an increased awareness of the needs of students and teachers beyond academic (i.e., social, mental, personal). 4. Ed.D. students will demonstrate a more caring attitude toward students placed at risk of educational failure.5. Ed.D. students will display increased concern for diversity among students, faculty, and administration.	1. Graduates will positively impact student achievement in their schools.2. Graduates will positively impact quality of instruction (teaching) in their schools.3. Graduates will move into more top-level leadership positions impacting policy in division and at state levels (e.g., principals, superintendents, DOE, etc.)4. Ed.D. faculty and students will display a willingness to disrupt the status quo for the purpose of maximizing learning opportunities for all those involved in the organization.

Table 2

Figure 3. Inserting Outcomes and Impact.

CONNECTING OUTCOMES AND IMPACT TO RESOURCES, ACTIVITIES, AND OUTPUTS

Drawing the picture (logic models) of our intended impact and outcomes now will help to identify aligned outputs, activities, and resources. Continuing the backward mapping concept is helpful here so it is recommended that outputs are selected first followed by activities, then lastly resources. An example of why this rationale is desired relates to the possibility that we might find that resources are inadequate to accomplish our intended results (outcomes and impact). The common practice in educational administration programs is to consider the resources first, and if deficient or insufficient, lower our goals and expectations of outcomes and impact. Focusing on the intended outcomes and impact first helps to identify and anticipate what will be needed for the Ed.D. program and seek out needed resources.

Connecting resources and actions to the Ed.D. program results is critical. Therefore, the alignment needs considerable attention to increase the likelihood of achieving the intended results. McDavid and Hawthorn (2006) point to the importance of “testing the causal linkages in program logic models “(p. 114). Their position is that we want to examine the connections and linkages so that we can see whether (for example) levels of outputs are correlated with levels of outcomes. Beginning with the end in sight (intended outcomes and impact) and utilizing the concept of backward mapping and the creation of “if...then...” statements, the process helps to assure appropriate correlations and linkages between each of the 5 components of the logic model. To complete the entire logic model (see Figure 4), a few recommendations are offered here to align the resources, activities, and outputs to the desired and intended results.

Outputs

As outputs are identified, we can more specifically address the programmatic changes we desire and revisit the “if...then...” statement we are using to align the programmatic changes to accomplish our already identified outcomes. For example, if we desire to increase our Ed.D. students’ level of functioning (e.g., effective use of data to improve decision-making), one programmatic change will be to carefully align our course syllabi to offer frequent and substantive opportunities for students to practice this skill. Experience and observation reveal that reserving the practice of this critical skill for the one or two research courses in the program has generally not accomplished the intended outcome (Creighton & Glenn, 2008). Figure 4 shows several other examples of outputs aligned with intended outcomes.

Activities

To help identify appropriate activities, we ask this question: what activities need to be implemented in order for the Ed.D. program’s intended results to be realized? In other words, what selected activities and processes help create a cohesive whole to achieve desired outcomes? Activities are relatively easy to implement and more importantly easy to monitor and change if necessary. They also help provide an effective means to document and benchmark progress as part of the evaluation process. “Which activities have been completed? Where did the program face barriers? How successfully were activities completed? What additional activities were discovered along the way that are critical to program success? (W. K. Kellogg Foundation, 2007a, p. 37).

Resources

Resources enable the Ed.D. program’s effectiveness and provide the support to carry out the activities and programmatic changes. Examples of resources are: funding, faculty, organizational structure, collaborating partners, statewide networks, facilities, technology, and supplies. As resources change in substantive ways that affect outputs, logic models should be adjusted to reflect changes in the activities, outputs, outcomes, and perhaps impact. All efforts should be made to maximize available resources to realize intended outcomes and impact.

Along with monitoring resources, the logic model should also account for any limiting factors such as negative attitudes, lack of resources, dwindling funds, policies, laws, regulations, and geography. As Roger Kauffman et al. (1998) emphasize in their SWOT analysis, we are quick to analyze resources, opportunities, and strengths but not so quick to survey threats, weaknesses, and a lack of resources. Good program evaluation plans require an analysis of existing resources along with barriers that might be encountered along the way.

Certain resources are needed to operate your Ed.D. Program	IF you have access to the resources, THEN you can use them to accomplish your Ed.D. planned activities	IF you accomplish your planned activities, THEN you are likely to deliver the new programmatic features (e.g., action-based research dissertations)	IF you deliver the new programmatic features, THEN your Ed.D. students will increase their level of functioning such as attitudes, behaviors, knowledge and skills	IF doctoral students increase their level of functioning, THEN certain changes in schools, communities, and the level of teaching and learning might be expected to occur
Resources	Activities	Outputs	Outcomes	Impact
1. Five off-campus sites delivering the Ed.D. program to the Commonwealth of Virginia.2. Force of 12 full-time education leadership faculty, with minimal use of adjuncts.3. Travel funds to support delivery of the Ed.D. to the Blacksburg campus and five off-campus sites.4. Generous travel funds for faculty travel to conferences and other professional development.5. Tenure-track faculty receive one course reduction in load for their research and a second course reduction for their Ed.D. advising.	1. Course syllabi aligned with NCATE/ELCC standards.2. Ed.D. students enter as cohort.3. Ed.D. programs offered on three-year rotation across 5 sites to allow for reasonable and realistic dissertation load for faculty.4. Series of benchmarks in place.5. Implementation of 2-credit research and field studies modules offered each semester of the 3-year Ed.D. program.6. Academic advisor in place upon entry and dissertation chair at end of 1 year.7. Individual student Program of Studies completed at end of first semester.8. Efforts made to expose Ed.D. students to all faculty members.	1. Doctoral students conducting action research/program evaluations/policy analyses to address pressing K-12 issues.2. Increased quality and relevance of dissertation study.3. Reduced number of Ed.D. dropouts.4. Ed.D. students maintain 3.3 GPA throughout program.4. 90% of doc students will defend dissertations in three years.5. Program results in 100% completion rate in six years.	1. Ed.D. students will display an increased knowledge of using data to improve decision making.2. Ed.D. students will become more able to process multiple tasks and determine appropriate solutions.3. Ed.D. students will display an increased awareness of the needs of students and teachers beyond academic (i.e., social, mental, personal). 4. Ed.D. students will demonstrate a more caring attitude toward students placed at risk of educational failure.5. Ed.D. students will display an increased concern for diversity and equity among students, faculty, and administration.	1. Graduates will positively impact student achievement in their schools.2. Graduates will positively impact quality of instruction (teaching) in their schools.3. Graduates will move into more top-level leadership positions impacting policy in division and at state levels (e.g., principals, superintendents, DOE, etc.)4. Ed.D. faculty and students will display a willingness to disrupt the status quo for the purpose of maximizing learning opportunities for all those involved in the organization.5. Virginia Tech increases statewide presence and increased impact on teaching and learning across the Commonwealth.

Table 3

Figure 4. A Completed Logic Model.

Concluding Thoughts

This chapter has presented and discussed only one type of logic model. This particular logic model seems appropriate because it focuses on intended outcomes and impact of an education doctoral program (Ed.D.). The literature reveals a number of other logic models such as: a theories approach model (conceptual) or activities approach model (applied). It is not unusual to see programs using two or three types of models for different purposes. The Kellogg Foundation posits that no one model fits all needs and program leaders need to decide on exactly what is to be achieved with a logic model and where they are in their program before deciding on which model to use. Readers are encouraged to investigate other models as presented in the Kellogg Foundation's Logic Model Handbook and Development Guide.

Logic models help us to create information for planning, designing, implementing, and assessing the results of our efforts to address and solve problems using policy and programs (McDavid & Hawthorn, 2006). It is a natural extension to consider their use in the creation, implementation, and evaluation of our Ed.D. programs in educational administration. Most important is the realization that logic models come in many variations and are not meant to give us a static picture of our programs, but instead assist in the dynamic nature of our work. Program leaders, faculty, and students must stand ready for frequent and continuous adaptation of logic models as we continually strive for program quality and improvement.

The education degree granting institutions selected to participate in this initiative are committed to working together over the coming three years to strengthen every facet of their current doctoral programs – from candidate selection to the “capstone” experiences for advanced candidates, from the assessment procedures used in the program to the curriculum that is offered. Participants will be guided by recent work of the Carnegie Foundation that has focused on pursuit of excellence in doctoral education and professional preparation. The goal of CPED is to reclaim the education doctorate and to transform it into the degree of choice for the next generation of school and college leaders.

The intent of this effort is to focus on the doctorate of professional practice and to draw on recent work of the Foundation that carefully and critically examined the PhD in seven fields of study (including education). Outreach to academics in other fields (psychology, audiology, urban planning, design, pharmacology, engineering and physical therapy) who are engaged in a similar exploration will occur, but this initiative is intended to help participating education schools better distinguish between the two highest degrees offered with the intent of strengthening both. The goal of preparing better scholars and more skilled practitioners is a shared aspiration of the participants, but the specific focus of CPED is the education doctorate leading to highly skilled leadership in school and college settings and in the organizations that support them.

REFERENCES

Coleman, D., & Adams, R. (2001). University education administration development: Administrative skills vs. administrative standards as predictors of administrative success. In T. J. Kowalski (Ed.), 2001 National Council of Professors of Educational Administration Yearbook (pp. 25-35). Lanham, MD: Scarecrow Press.

Creighton, T., & Glenn, W. (2008). How principals can use data effectively. Unpublished manuscript, Virginia Tech.

Creighton, T., & Jones, G. (2001). Selection or self-selection: How rigorous are our selection criteria for education administration preparation programs? Paper presented at the National Council of Professors of Educational Administration, Houston, TX. Retrieved October 21, 2007 from: <http://www.eric.ed.gov/ERICDocs/data/ericdocs2sq>

Creighton, T. (1996). A construct validation of the Administrative Diagnostic Inventory (Report No. TM 027 024). Washington, DC: Clearinghouse on Assessment and Evaluation. (ERIC Document Reproduction Service No. ED 410 254).

Cronbach, C. (1980). Toward reform in program evaluation. San Francisco: Jossey-Bass.

Gladwell, M. (2002). The tipping point: How little things can make a big difference. New York: Little, Brown and Company.

Golde, C. & Walker, G. (2006). Envisioning the future of doctoral education: Preparing stewards of the discipline. San Francisco: Jossey-Bass.

Kaufman, R., Herman, J., & Watters, K. (1998). *Educational planning: Strategic, tactical, operational*. Lancaster, PA: Technomic Press.

Levine, A. (2005). *Educating School Leaders: The Education Schools Project*. Retrieved January 30, 2008 from: <http://www.edschools.org/pdf/Final313.pdf>¹

McDavid, J., & Hawthorn, L. (2006). *Program evaluation and performance measurement: An introduction to practice*. Thousand Oaks, CA: Sage Publications.

Murphy, J., & Vriesenga, M. (2004). *Research on preparation programs in educational administration: An analysis*. Columbia, MO: University Council for Educational Administration.

Patton, M. (1997). *Understanding research methods: An overview of the essentials*. Thousand Oaks, CA: Sage.

Willis, J. (2007). *Proposal to establish a doctoral program in educational leadership at Manhattanville College*. Manhattanville College, Purchase, NY.

W.K. Kellogg Foundation (2007a). *W.K. Kellogg Foundation Handbook*. Battle Creek, MI: W.K. Kellogg Foundation.

W.K. Kellogg Foundation (2007b). *W.K. Kellogg Logic Model Development Guide*. Battle Creek, MI: W.K. Kellogg Foundation.

¹<http://www.edschools.org/pdf/Final313.pdf>