

**Studying the Impact of High Quality Professional Development on  
Instructional Practices and Student Achievement**

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## Introduction

Duval County Public Schools (DCPS) is a large and diverse metropolitan school district serving over 130,000 students in northeast Florida. It has made a public commitment to implementing “a standards-based reform model for improving instruction and student achievement in all schools”. The District has engaged in several rigorous and self-reflective reviews of their operational and instructional systems over the past several years which have served to identify needs and focus efforts toward “building a world-class school district”. Among these efforts were the completion of a benchmarking study in conjunction with the Council of Great City Schools in 2002, and participation in a community-wide, collaborative dialogue with the New Century Commission on Education culminating in a final report in 2003. The report outlined progress toward implementing recommendations organized around six key areas: *raising student performance; increasing the quality of student experiences; strengthening personnel, management, and operations; building capacity to support change; implementing a standards-based accountability system; and rethinking school funding.*

These efforts were conducted in collaboration with the Alliance for World Class Education, a group of influential business leaders in Jacksonville interested in leveraging resources in the community to complement the efforts of the School Board and Administration of DCPS in ways that would have the greatest impact on creating a world-class education system. To that end, the Alliance is interested in supporting programs to enhance: *teacher quality and recognition; principal excellence; governance and organizational excellence; and beneficial public policy.* The Alliance has made a financial and strategic commitment to improving public education in Duval County. One of the visible testaments to this commitment by the Alliance for World Class Education in Jacksonville is its generous support of the Schultz Center for Teaching and Leadership. The Schultz Center opened in February of 2002 as a facility expressly designed to provide capacity-building support for educators. As an independent, non-profit corporation, it was established to provide high-quality professional development and training to educators in Baker, Clay, Duval, Nassau, and St. Johns counties. By virtue of its physical location in the city of Jacksonville, however, a particularly close relationship exists between the Schultz Center and the Duval County Public Schools (DCPS). Since its creation, the Schultz Center has partnered with DCPS to further the district’s goal of implementing a standards-based curriculum and instruction program for all students in Duval County.

## Informing the Study

Improving the quality of teaching and instructional practice is essential to implementing the standards-based educational reforms that are at the heart of school improvement initiatives in the 21<sup>st</sup> century. The legislation of the Goals 2000 program, the federal *Improving America's Schools Act*, and most recently, the *No Child Left Behind Act*, have generated renewed interest in identifying reform models for public schools that work, and in particular, those that can be successful with schools in economically disadvantaged communities, with students at all achievement levels, and from diverse family, racial, and economic backgrounds. In a review of successful models for school reform called First Things First: A Framework for Successful School Reform, seven critical features were identified most commonly – four having to do with students, and three having to do with the adults working with them. Key reform features dealing with students were: to provide continuity of caring; to increase instructional time; to set high, clear, and fair academic standards (that define what all students will know and be able to do); and to provide enriched and diverse opportunities for learning. Key features aimed at adults were: to equip, empower, and expect all staff to improve instruction; to allow for flexible allocation of available resources; and to assure collective responsibility for student achievement. What is interesting about this review of systemic improvement models is that only two features were identified as necessary consistently across all nineteen school reform models. Those were **the need for setting high, clear, and fair academic standards** for students and **the joint need for adults working with students to be equipped, empowered, and expected to improve instruction.**<sup>i</sup> If there is the will to make systemic improvement in schools then, the prevailing wisdom seems to support the choice of a standards-based instructional system as paramount, and the need to train and equip teachers in new and different ways as essential.

## Evaluating Professional Development

There seems to be general consensus that the improvement of teachers' skills and knowledge is one of the most important investments of time and money that local, state, and national decision-makers can make, and researchers now generally agree on the essential elements of what must be present in order to define professional development as "high quality". In a move to increase the level of accountability for the millions of dollars spent annually on teacher professional development, the NCLB legislation's definition of "high quality professional development" emerged as the use of *research-based training and delivery models* that showed evidence of *linkages to school and district improvement initiatives*, and incorporated the *on-going assessment of student outcomes to determine the impact of training on student achievement*. The Florida

Department of Education supports the tenets of the NCLB legislation, and has imbedded these characteristics in its own Professional Development Standards Protocol required for use by districts in designing and assessing the effectiveness of staff development and training courses offered in Florida school districts.

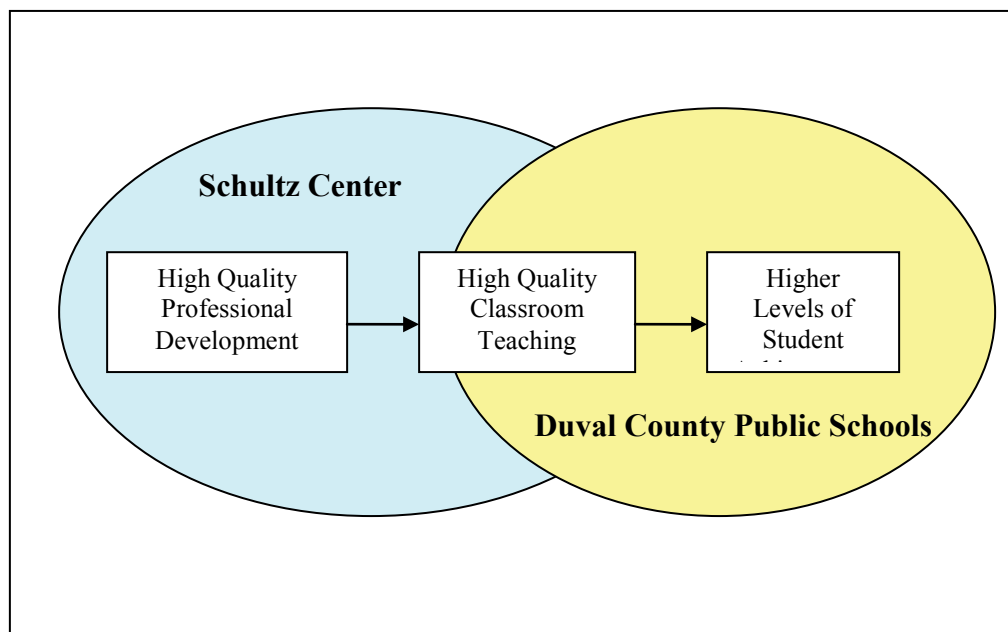
In the past there have been serious concerns raised about the real effectiveness of many professional development activities and programs. Unfortunately, as a body of work, the literature on professional development is filled with a litany of disappointing results. <sup>ii</sup> For many reasons, we understand that evaluating the impact of professional development on teaching and learning is a complex and multifaceted endeavor. One of the problems has been in defining the “activity” or “program” being evaluated. Professional development comes in many forms: one-day workshops, mentoring associations and observations, teacher collaborative activities, individual inquiries or independent studies, and university courses. The criteria in each case for determining effectiveness of the professional development activities have been similarly varied. <sup>iii</sup> Guskey reported that, in the past, evaluators have routinely used as effectiveness criteria such things as participant reactions to their experience, attitude changes reported by participants, and self-reports of implementation. Using any measures of student learning as the primary criteria for determining success has been extremely rare. This is changing, however, as the evidence of effects on student learning is increasingly the kind of evidence that policy makers request. <sup>iv</sup>

As a result of these demands for better evidence of effectiveness, and in particular, the evidence of impact of teacher training on student achievement, there has also been greater attention paid to incorporating design characteristics in professional development programs that would allow for systematic and results-oriented evaluation. There are two components that have to be addressed if we are to successfully evaluate the effectiveness of programs for teachers and their impact on students – the observable characteristics of the specific training delivered, and the types of evidence required for effectiveness by policymakers and school leaders. We have moved well beyond the shallow forms of evaluation provided by documenting attendance in staff development and the satisfaction of participants as evidence of success. Guskey identifies four principles of effective professional development: 1) a clear focus on learning and learners, 2) an emphasis on individual and organizational change, 3) small changes guided by a grand vision, and 4) imbedded and ongoing activities. <sup>v</sup> In a recent brief written for policy makers published by the American Educational Research Association, the authors identify two critical elements of professional development that have been found most necessary to support actual changes in classroom practice: 1) *a focus on content knowledge and coherence* which includes building on existing teacher knowledge, aligning programs with state and district standards and assessments, and 2) *supporting communication and collaboration* among teachers who are attempting to reform instruction in promising ways. <sup>vi</sup>

These principles have shaped the design and delivery of professional development courses at the Schultz Center for Teaching and Leadership, and in particular, the menu of standards-based courses developed jointly by Duval County and the Schultz Center. From an organizational perspective, and because the Schultz Center is an independent, non-profit entity which is

contracted for services by Duval County, there are both individual and joint interests in determining the effectiveness of the professional development training provided to participants of all courses. In a separate effort, the Schultz Center is engaged in developing a model for evaluating the quality and cost-effectiveness of the variety of professional development opportunities that are offered at this venue. Depending on the type of training contracted, the scope and length of services involved, the audience(s) being served, and the nature of the skills and content taught, there will be a different specific plan for evaluating the quality and effectiveness of training. In most cases, however, there will be a shared interest in seeing that new knowledge and skills conveyed in professional development find their way into classroom practice. Figure 1 below depicts one way of conceptualizing these individual and shared interests in the case of studying the impact of standards-based literacy training on classroom teaching and on student achievement in Duval County. The primary responsibility for establishing “quality” in the professional development offered to participants belongs to the Schultz Center; the primary responsibility for assuring “quality” instruction in the classroom belongs to the school system.

Figure 1: The Shared Responsibility for Evaluating the Impact of Professional Development



Our perspective on this work is that a joint, mutual need and interest exists in developing methods, measures, and procedures for obtaining data to measure the fidelity and implementation of practices as they occur in classrooms. This intermediate step has often been overlooked, and is necessary before it will be possible to move to the next level of assurance in establishing a cause and effect relationship between high quality professional development and what we hope to see as improved levels of student achievement in the classroom.

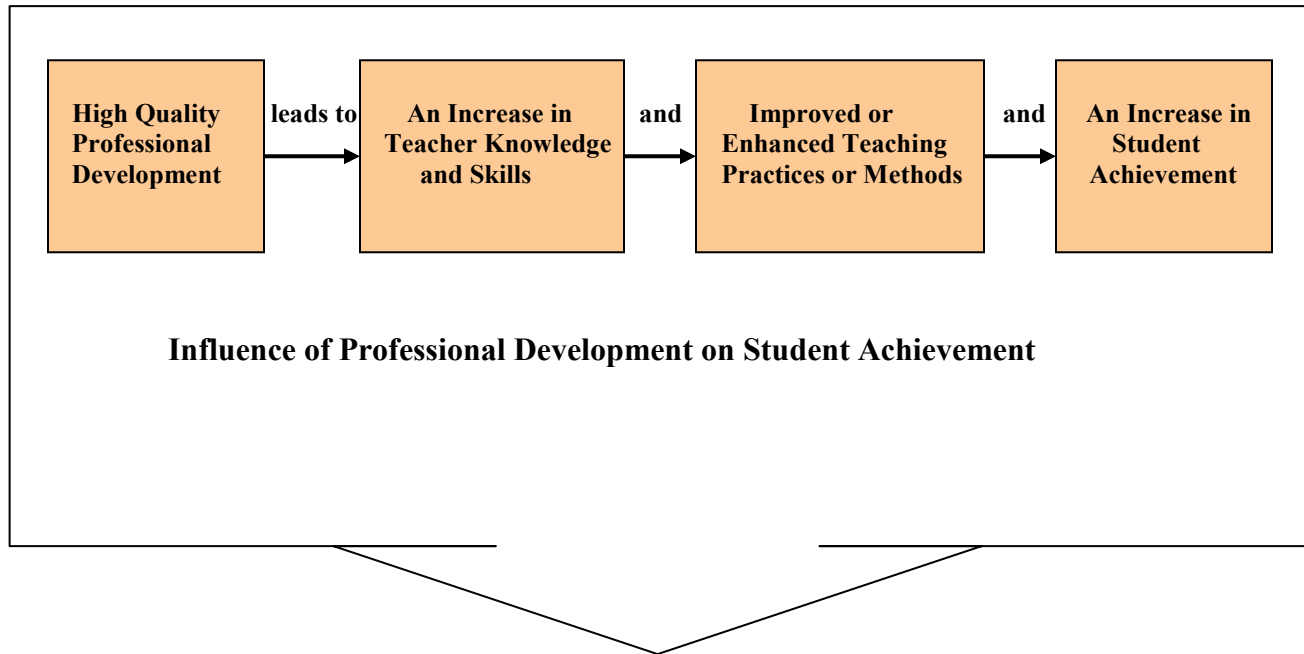
## Design of the Schultz Center/Duval County Study

The “gold standard” for evaluation research in the current post-NCLB climate is the use of rigorous designs involving preferably random assignment of subjects to groups and the assignment of subjects (or groups or schools) to conditions. If this could be done ahead of time, then experimental conditions can more closely be approximated, and we could then make strong statements about whether certain “treatments” or “programs” caused results. This is typically very hard to manage for school districts under normal circumstances. Seldom are programs or initiatives planned far enough in advance to anticipate or project needs for systematic evaluation of results. Schools and districts are generally reactionary in nature and implement programs and services which they believe to be most beneficial for students at a given time. This was also the case in the current study. The school district, and former superintendent in particular, was convinced by the weight of literature on the benefits of standards-based instructional programs to acquire expertise from national experts, used benchmarking models from business, and implemented a plan for the district to move toward this goal at an accelerated pace. Professional development of teachers to inform, model, and implement what this reform would like in the classrooms seemed a logical and necessary means to an end.

Looking at it now, from the standpoint of whether this multi-million dollar investment in Duval County has been worthwhile, and specifically, whether it has served to move student achievement to higher levels, we are forced to look retroactively at what took place. When trying to explain results after the fact (post hoc analysis), we have at best a causal-comparative research design which we believe can provide evidence that things are working in the way we might have predicted. Whether designing or developing a program, or evaluating the results of a program (as we are attempting to do here), there has to be a model we have in mind for our ‘theory of action’. This mental model is what would have guided the choice of program, or the development of features in the program which became the Standards-Based Literacy Program in Duval County. Even in the absence of experimental design conditions, if we can show that documented results of statistically significant findings support the program logic model we have developed, then we have at least taken a major step toward verifying that the theory of action works. For the same reasons stated in CEPRI’s charge “to evaluate the degree to which the inservice education programs of school districts have resulted in improved student performance”, as a state, and as individual school districts, we have a need to answer the question about what return on investment is being seen in the millions of dollars statewide that are being spent.

In Duval County, CEPRI saw the beginnings of a system that would lead us closer to the ability to answer that question directly in terms of impact of professional development on teachers, and in turn, the impact on students being served by those teachers. The State saw that a system for registering and documenting completion of professional development was in place, and that the intent was there to assess the level of implementation of training in classrooms by way of the standards rubrics. They also were pleased to see that early efforts at documenting the progress of students were being made by tracking the

progress of schools which had participated in training and those that had not. Our plan was to take this process to the next level of specificity by documenting more carefully and precisely at each level. We had in mind a simple theory of action:



What Students, Teachers, and Schools were included in the analyses?

Given that we were looking at what happened in retrospect, all schools with teachers who had participated in any professional development courses in (2004-2005) were first reviewed for possible inclusion in our analysis. Teacher take professional development for many reasons – some for specific certification requirements, some for short-term growth in content or skills they have a personal interest in gaining, and some for long-term professional development and job-related growth. First, **we focused the scope of this study to look at a set of courses which were designed to address a district-wide organizational commitment** to change in the way teachers work with students – the system’s move toward a standards-based curriculum and instruction program. We realized that as long as there is not a strict requirement (from the state or district administrative levels) for teachers to take specific training or courses, there would be variability in the extent to which teachers enrolled from individual schools. The reasons accounting for variation from school to school will generally be from three sources:

State Mandates – we know that secondary schools (middle and high schools) are required to meet stringent requirements for providing *intensive reading courses* in schools. Teaching these courses requires having additional levels of certification, endorsements, and/or additional content knowledge and skill in the area of reading instruction that secondary teachers traditionally have not had. Because of this requirement, we were not surprised to see that secondary schools were not (at this point in time) showing up with teachers demonstrating high levels of completion of standards-based literacy training. Second then, **we began to focus attention on elementary schools.**

District and School Administration – the influence of principals on the culture of their schools is undisputable. They are expected to be the instructional leaders in their buildings and implement the district’s vision for an integrated instructional program in schools. Duval County has adopted and endorsed the use of a standards-based instructional program in all its schools. We have made the assumption that principals will encourage, motivate, and actively engage teachers in the effort to acquire new and additional skills and knowledge in the form of the Standards-Based Literacy Training offered through the Schultz Center. Even so, **we recognized that individual schools (and individual administrators) would vary to some degree on their level of commitment to this systemic reform, and therefore, schools would have different levels of participation and completion in evidence.**

Individual Differences – we also need to recognize that choosing to partake of professional development offerings, beyond required training needed to complete necessary certification or endorsements, is a matter of individual initiative and choice. Although school principals can apply a range of subtle to direct forms of influence on teachers to encourage their participation in professional development courses, in the end, **teachers largely have the prerogative to become engaged** in quality improvement of teaching practices in the form of standards-based literacy training.

The endorsement of the Standards-Based Literacy Training was clear at the district level, so we included all teacher records from all schools for review of course enrollments. Because of the fact that all teachers have the choice of becoming engaged (or not) in professional development training, however, in a real sense our analysis will have to be seen as a comparison among those teachers who have *participated in training thus far. Who are these teachers?* Whether the choice was strictly their own, or encouraged directly or indirectly by their principals, this group of teachers is in some way different than all teachers in the district as a whole. One of the tasks for further research will be the discovery or explanation of what initiates a teacher’s commitment to training of this type. We accept the fact that we are dealing with a self-selected group of teachers. The analysis now will focus on whether completion of levels of standards-based literacy training makes a difference in the level of student achievement that can be seen as a result.

Is this group of teachers representative of schools throughout the district?

Since we were doing a post hoc analysis and could not plan in advance to systematically include specified teachers or schools, the best we could do after the fact was to show the representation of teachers across sections of the county. In this brief, initial study, we would expect to see a fairly even spread of elementary teachers from across the district participating in this series of courses given the system’s organizational commitment to this change initiative. Duval County is a large metropolitan public school district, with more than one hundred thirty schools, all distributed geographically among five regions. (A sixth region was created in the 2004-2005 school year, but this study was based on the assignment of teachers and students to schools before this took place.) We made sure that the schools and teachers involved represented geographically the district as a whole, and that the students whose scores were eventually used, were also in turn representative of the racial and socioeconomic makeup of the district. In the table below, you will see the numbers and percents of student scores used in the analysis. The student scores were grouped in classifications by the level of professional development completed by their teachers by region in the district. In other words, the table below illustrates that we analyzed 792 student scores which were drawn from teachers who had completed three defined levels of professional development in standards-based literacy training (described in more detail below). Region 4 is slightly over-represented with 241 of the students (30%) but not to an overwhelming extent, and not to a level that would have suggested an un-natural progression. Region 4 did include many schools which were involved in the first waves of teachers participating in standards-based training (in the form of America’s Choice) which began several years ago, and therefore would have had a longer period of time to disseminate training to more teachers. Due to long-standing desegregation plans and cross-district bussing and magnet program strategies, students from all racial groups and socioeconomic levels attend schools throughout the district. All sections of the district were represented in the schools and teachers included in the study. To the extent possible in this post hoc study, we ensured that student data was reflective of the range of student achievement as a whole, and that teachers participating in standards-based literacy training came from schools from across the district and from representative racial and socioeconomic subgroups of students.

Table 1: Students in Professional Development Groups by Region

**Teachers Represented in Levels of Standards-Based Training Completed and Regions of School District**

			REGION					Total
			1	2	3	4	5	
Trt_Group	Non_PD	Count	28	41	10	14	24	117
		% within Trt_Group	23.9%	35.0%	8.5%	12.0%	20.5%	100.0%
	Some_PD	Count	39	21	44	66	72	242
		% within Trt_Group	16.1%	8.7%	18.2%	27.3%	29.8%	100.0%
	Critical_PD	Count	89	43	87	161	53	433
		% within Trt_Group	20.6%	9.9%	20.1%	37.2%	12.2%	100.0%
Total	Count	156	105	141	241	149	792	
	% within Trt_Group	19.7%	13.3%	17.8%	30.4%	18.8%	100.0%	

Note: Although the table title includes “teachers represented” – please be aware that the numbers shown in the body of the table represent the numbers of student scores analyzed using the classifications for teachers described in the next section below.

### How were levels of professional development determined?

We focused on elementary schools and found all five regions represented well in the teachers included for review. Since student achievement was the focus of the final analysis, the labels used to describe the groups of student scores were based on the levels of professional development completed by the teachers. We defined groups of student FCAT scores in three categories:

- ‘Critical\_PD’ was defined as student scores from teachers completing both courses of Literacy 101 and Literacy 201 (attending 7 out of 8, or 8 out of 8 sessions offered) – **27 schools** had teachers who met this condition (36 teachers across the district were found to have met this condition level)
- ‘Some\_PD’ was defined as student scores from teachers who had completed at least one, but not both courses in the series of courses – **61 schools** had teachers who met this condition (14 teachers across the district had partially completed the training with at least one of the series completed)
- ‘Non\_PD’ was defined as student scores from teachers who had begun but not completed courses in the sequence of standards-based literacy training – **16 schools** had teachers who met this condition (5 teachers had only begun taking the series and had not completed even a single course).

### What about student performance and student gains?

The real point of all of this has been to determine whether the effort, resources, and expense invested in professional development for teachers has made a difference in student achievement. In the study proposal and design we argued for the need to look at student gains made from one year to the next as the most obvious way to measure whether the additional training has had an impact (during the school year) on students under the care of individual teachers. Teachers are responsible for taking students as far as they are able to move within a content area by using all the strategies and instructional methods at their disposal. The professional development training delivered to teachers in the form of standards-based literacy training should therefore have had a beneficial effect on their ability to move students further. For that reason, we focused on the gains made by teachers within those three classifications of professional development (Critical\_PD, Some\_PD, and Non-PD). The chart shown in the executive summary provided to CEPRI highlighted the gains made by students in fourth grade in fourth and fifth grades:

#### **4<sup>th</sup> Grade Results**

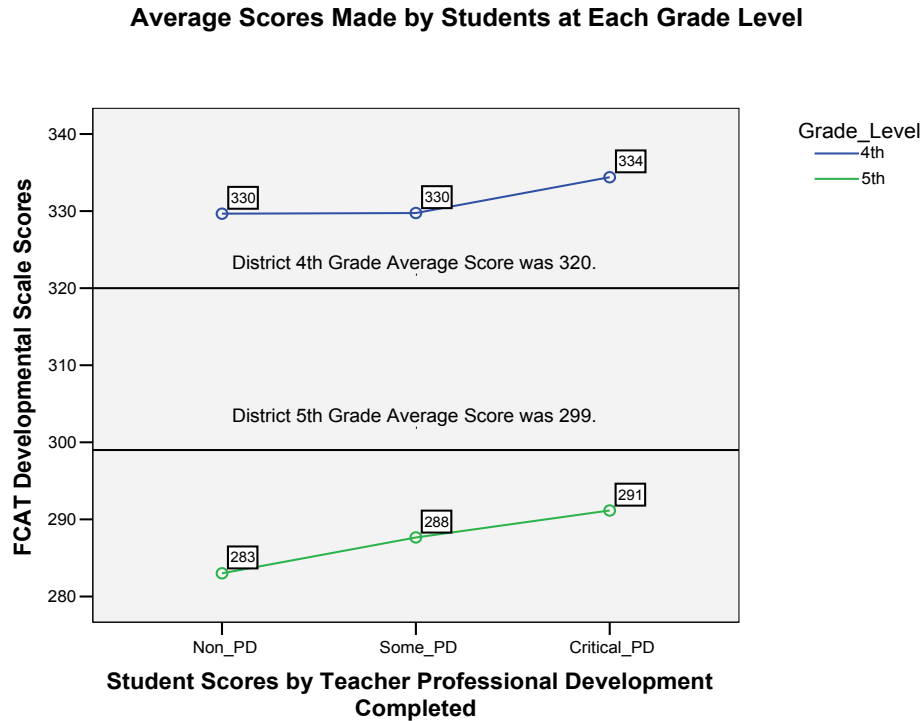
- NON-PD – students in classes of teachers at this level had average gains of **215** points

- SOME-PD – students in classes of teachers at this level had average gains of **220** points
- CRITICAL-PD – students in classes of teachers at this level had average gains of **241** points
- These gains were all on the FCAT developmental scale (ranging from 0-3000) and the district 4<sup>th</sup> grade average gain was **223** points.

**5<sup>th</sup> Grade Results**

- NON-PD – students in classes of teachers at this level had average gains of **50** points
- SOME-PD – students in classes of teachers at this level had average gains of **57** points
- CRITICAL-PD – students in classes of teachers at this level had average gains of **74** points
- These gains were all on the FCAT developmental scale (ranging from 0-3000) and the district 5<sup>th</sup> grade average gain was **60** points.

To provide a context for what was done, we need to recognize how this performance looks in comparison to the actual achievement status of students as well. Are these gains moving students closer to critical levels of performance for Duval County in comparison to performance standards in the State as a whole, and what does that actual level of achievement look like? The chart (Figure 2) below provides that snapshot of performance (These scores are shown on the FCAT standard 100 to 500 scale):



## Conclusions – What Do We Know and What Are Next Steps?

For all the reasons cited in the CEPRI paper, the issues of clearly and specifically accounting for expenditures in professional development at the State level and following those lines to the recipients of those dollars, and then to the programs and services provided by them, to the teacher recipients of those programs and services, and then, most importantly, to the benefits accrued to students whose teachers receive those services is a difficult task. We don't have all the answers about how teachers self-select themselves into taking professional development, or what the system is for selecting teachers to participate in professional development. We also don't have the mechanisms in place routinely or systematically in districts to make the connections between monies expended, services provided, and teachers participating in professional development provided by State funds. We don't have good data systems in place in districts to allow for routine or systematic retrieval of data for analyzing the impact of services on student achievement. We also don't have the mechanisms in place in school districts to make the connections between monies expended, services provided, and the learning taking place by the teachers themselves as they receive professional development (i.e., are they implementing what they were taught?). We would like to know more about how important the coaching element is to imbedding practice from content learned (professional development) into classroom instruction. Our sense is that this piece is extremely important, but has not yet been fully addressed. In order to account for this factor, we need more confidence in having an instrument to measure implementation in the classrooms, and determine procedures for shared responsibility (and resources) assigned to observing, collecting, and acting on this data.

However, although difficult, we **have learned** that it is possible to follow this path of resources to services to teachers and to students, and **we believe that it should be undertaken and pursued further**. At this point, we have seen hopeful signs that benefits to students will result:

- We know that for a limited number of teachers in Duval County who participated (and completed) courses teaching standards-based literacy content and classroom practices show a pattern of increasing achievement and student gains in the students they teach.
- We know that this pattern seems to support and validate a logic model which provided the basis for designing and providing this program of standards-based literacy training in Duval County.
- We know that, although difficult with current documentation and record-keeping practices, we can attribute student gains and achievement, as a function of the resources invested in professional development.
- And we know now what steps would be necessary to make a fuller scale explanation of the impact of professional development on teacher effectiveness and on student learning.

### Next Steps for Continuing Work in 2006-2007

- Continue adding to the cumulative professional development completion data in order to increase the identified body of evidence on

- student performance of teachers who complete sequence of standards-based courses at all levels (elementary, middle, high)
- Validate and refine classroom-level implementation rubrics and determine procedures for administering this instrument in classrooms of teachers engaged in professional development at different stages
  - Develop a plan for studying the impact of coaching as it relates to the model for imbedding the learning acquired in training and seen as it is implemented in classrooms
  - Determine a differentiated plan for how implementation data at the classroom, school, and district level works together in an aligned model to show district-wide dissemination of systemic change.

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I The Institute for Research and Reform in Education. (2003). First Things First: A Framework for Successful School Reform. A White Paper prepared for the Ewing Marion Kauffman Foundation by the Institute for Research and Reform in Education.

<sup>ii</sup> Guskey, T.R. (1986). Staff development and teacher change. *Educational Researcher*, 15(5), 5-12;  
Corcoran, T.B. (1995a, June). Helping teachers teach well: Transforming professional development. CPRE Policy Briefs. New Brunswick, NJ: Consortium for Policy Research in Education, Rutgers University

<sup>iii</sup> Kirkpatrick, D.L. (1996). Great ideas revisited. Techniques for evaluating training programs. Revisiting Kirkpatrick's four-level model. *Training and Development Journal*, 50(1), 54-59.

<sup>iv</sup> Guskey, T. R. (2000). *Evaluating Professional Development*. Thousand Oaks, CA: Corwin Press, Inc. pp. 32-33.

<sup>v</sup> Guskey, T. R. (2000). *Evaluating Professional Development*. Thousand Oaks, CA: Corwin Press, Inc. pp. 36-38.

<sup>vi</sup> American Educational Research Association. (2005). Teaching teachers: Professional development to improve student achievement. Summer 2005, Volume 3, Issue 1.