

Reflective Case Analysis 2:
Sandra Sanchez and Vincent Peters

Submitted By:

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1. Stakeholders

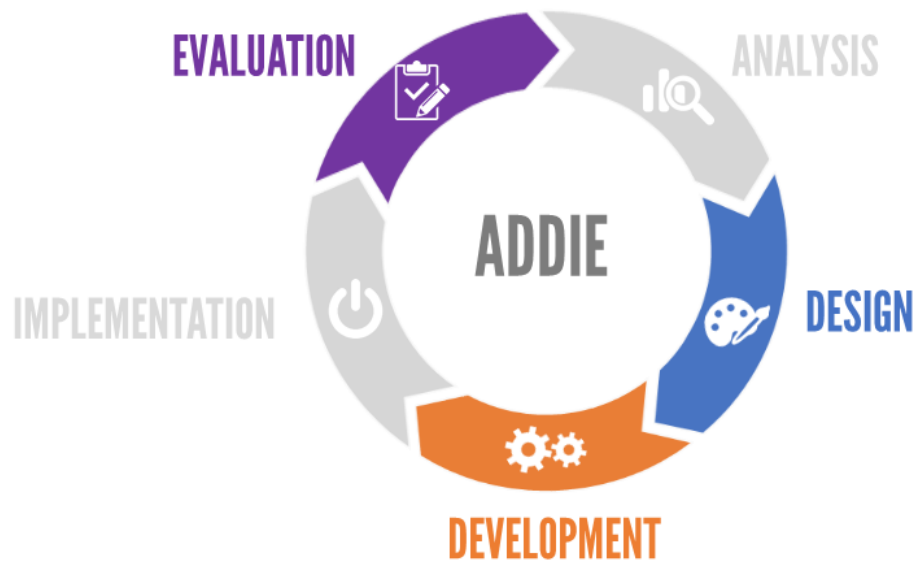
Stakeholder	Position	Primary Project Role	Primary Concern(s)
School District	Administrators	Client	Spearheading a pilot teacher training program that prepares teachers to teach in accordance with Common Core Standards. The program will then be expanded to other district schools in year two.
Vincent Peters	Outside Consultant	Instructional Designer	Designing a training program for teachers that enables them to adapt their teaching methods to meet the Common Core Standards and to develop a plan that assesses how teachers are progressing toward this goal.
Sandra Sanchez	Vice Principal of Los Santos High School	SME/Committee Chair	Providing enough information to contextualize the educational setting and Common Core Standards for which Vincent will design and develop training because he is neither familiar with CC nor has any experience designing K–12 instruction and evaluation.
Edward Contreras	English Teacher	Audience/Committee Member	Being involved with yet another education mandate that may never be seen through.
Joyce Brown	Special Education Teacher	Audience/Committee Member	Having the chance to make changes that would help her students succeed.
Chris Collings	Math Curricular Coach	Audience/Committee Member	Wondering if teachers will be appropriately compensated for attending extra sessions or trainings.
Carmen Vasquez	Parent to current student	Audience/Committee Member	Wanting her son to earn a high school diploma and have a chance at a successful life.
Josie Galvan	District ELL Program Coordinator	Audience/Committee Member	Concerned that other teachers will not be able to communicate what is expected on the test to non-native-English-speaking students.

Students	Los Santos Student Body	Audience/ Beneficiaries of Training	--
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2. ID Challenges

Vincent has been hired to create a teacher training program with the goal of training teachers to teach in alignment with the Common Core Standards. Vincent has also been tasked with developing an evaluation plan to assess the extent to which teachers have adapted their teaching to meet the new performance-based standards. After speaking with Sandra Sanchez, Los Santos High School's vice principal, and learning more about the district's Common Core mandate, schools, student body, and challenges, Vincent met with a committee of teachers and other stakeholders to collect information and solicit feedback about a range of topics that he will need to take into account when designing the training program. With this information, Vincent analyzed the situation and determined the general training needs and constraints.

Because Vincent has been hired to create both the training materials and teacher assessments to be piloted at Los Santos, his key ID challenges will fall within the design and development, as well as the evaluation stages of the ADDIE model.



ID Challenge 1: Design and develop a program that trains teachers to adapt their current teaching methods to develop the knowledge and skills required for students to meet the new Common Core performance-based standards.

Vincent’s teacher-training program will be piloted at Los Santos High School. Los Santos teachers possess varying levels of experience and subject-matter expertise, and they teach an equally diverse student population, which includes special needs students and English language learners. Vincent’s challenge will be to determine the primary teaching approach to incorporate into the training program and to ensure that this approach is not only effective in developing the knowledge and skills required for students to meet the Common Core standards but also that it will be compatible with teaching special needs students and English language learners.

ID Challenge 2: Design and develop an evaluation plan that measures the effectiveness of teachers in preparing students to meet the Common Core standards.

The second, and complementary, ID challenge that Vincent faces is to design and develop an evaluation plan that not only assesses teachers' specific performance as a result of the training but also evaluates the extent to which the training has been successful in achieving its main goal: to prepare teachers to teach in alignment with the new Common Core standards. In designing this plan, Vincent will need to determine what to evaluate (e.g., reaction, learning, behavior, results), when to evaluate (e.g., formative, summative), how to evaluate (e.g., specific evaluation instruments), and who will evaluate (e.g., self-, peer, supervisor, outside consultant).

Case-Specific Constraints

There are several case-specific constraints that Vincent will need to address in either the training's design and development, the evaluation plan, or both.

Constraint 1: Negative response to the training program from teachers affected by budget cuts and pay rate freezes, who are weary from mandates and initiatives, or both.

Sandra highlights her concerns about how teachers would respond both to another initiative and to the idea of bringing in an outside consultant to design and develop the training project. Vincent's meeting with teachers confirms that managing the diverse needs of both the teachers and their students will be a balancing act, but one that is essential to getting everyone onboard.

Challenge: Can Vincent get teachers to set aside their personal opinions about the training mandate itself, reconcile the staff's different personal and professional agendas, and motivate teachers to buy into the training program?

Constraint 2: There are a limited number of professional development hours in which to conduct training.

Vincent has been told that the training can only be conducted on the four required professional days (24 hours) during the school year.

Challenge: How can Vincent structure the designated time to maximize the training's effectiveness and also plan for other interventions that will create additional training or feedback opportunities?

Constraint 3: Students need to develop test-taking skills for the Common Core-based exam they will be taking.

Sandra mentioned to Vincent that all students would be taking a Common Core-based test. However, factoring test preparation and test-taking skills development into an already limited schedule to conduct the teacher training could reduce the focus and, potentially, the effectiveness of what Vincent has been hired to do: design and develop a training program that enables teachers to adapt their teaching methods to the Common Core. Conversely, student exam results that do not meet school or district expectations could be blamed on Vincent's training program.

Challenge: How can Vincent account for student test preparation without losing the already limited amount of training time that teachers have to adapt their teaching methods for Common Core standards?

Constraint 4: The student population that includes a segment with learning disabilities as well as students who are English language learners.

Sandra explained to Vincent that Los Santos High School has a special population of students who must be accounted for by federal mandate. The teaching approach that is used as the training program's focus will need to be amenable to developing the skills and knowledge of

not only the general student population, but also students who have a learning disability or English-language proficiency issues.

Challenge: How can Vincent create training materials that focus on teachers adapting a classroom approach that allows for differentiation of subject matter but is also inclusive enough for teachers to use to teach Common Core standards to develop the skills and knowledge that students with disabilities or language needs must have to meet Common Core performance-based standards?

Constraint 5: Vincent will not administer the training and will not learn of student exam results.

Vincent has been hired to design and develop the teacher training program at Los Santos, but he will not administer it. Therefore, Vincent will not be privy to the school's Common Core exam results because this exam is at least two years away from being administered. Because of these two factors, Vincent will not be able to evaluate the training's effectiveness for himself.

Challenge: How can Vincent create an evaluation plan to measure the teacher training program's effectiveness when an important element of evaluation—results—will not be examined until long after the completion of the training?

Based on these specific ID challenges and the case-specific constraints that Vincent must address, I have prioritized the design challenges and case-specific constraints as follows:

#	Challenge/Constraint	Type
1	Design and develop a program that trains teachers to adapt their current teaching methods to develop the knowledge and skills	ID Challenge 1

	required for students to meet the new Common Core performance-based standards.	
2	Negative response to the training program from teachers affected by budget cuts and pay rate freezes, who are weary from mandates and initiatives, or both.	Case Constraint 1
3	There are a limited number of professional development hours in which to conduct training.	Case Constraint 2
4	The student population that includes a segment with learning disabilities as well as students who are English language learners.	Case Constraint 4
5	Design and develop an evaluation plan that measures the effectiveness of teachers in preparing students to meet the Common Core standards.	ID Challenge 2
6	Vincent will not administer the training and will not learn of student exam results.	Case Constraint 5
7	Students need to develop test-taking skills for the Common Core-based exam they will be taking.	Case Constraint 3

I have ranked the first ID challenge as the top priority precisely because Vincent has been hired to design and develop a teacher training program. The constraints I ranked as priorities 2 and 3 will directly affect his ability to successfully tackle the first ID challenge, so it is paramount that Vincent address these potential attitude and scheduling issues. He will need to manage a diverse range of teacher interests and agendas to convince teachers that this mandate will be worth their time and effort. Limited training opportunities (priority 3) will challenge Vincent's ability to problem solve using creative scheduling and leveraging both teacher

motivation and school technology to create additional training spaces that would not constitute extra required teacher time and duties. The fourth priority that Vincent must consider in the course's design is to ensure that whatever teaching approach is emphasized in the training is also usable with special needs students and English language learners. Failure to do so will both only alienate several key stakeholders and keep the school from fulfilling its federal mandate to ensure that *all* learners are able to meet the Common Core standards.

I ranked Vincent's second ID challenge, which is the creation of a plan to evaluate teachers, as fifth on the priorities list. Completing the design and development of the training program and resolving training-related constraints will allow Vincent to create a more specific evaluation plan. Vincent's evaluation plan need to be specific so that it can be conducted by others because he will not be administering the training program. It must also but the plan will also use actual Common Core exam results as a validator of the training because the results will not be available in the short term (priority 6); moreover, small sample sizes of exam results may not necessarily be reliable indicators of how successful the teacher training program was.

The final priority on Vincent's list is to address the status of the test-preparation sessions currently being conducted for students. I ranked this as a low priority because it does not fall within the scope of the teacher training program. However, because test-skills development is currently being done for students taking state exams and Common Core exam results will soon become key measurements to determine the extent to which students will be successful in college and their future careers, Vincent will need to decide the most effective and efficient way to maintain time for test preparation, even if it is keeping most of its current elements intact.

3. Application of Readings/Experiences to Case Study

How did the week's assigned readings contribute to your analysis?

The review of Rogers' diffusion of innovations theory (Sahin, 2006) was quite helpful. I had previously heard of the concept of diffusion, but I was not sure how it could be applied. Needless to say, the number of steps, and even the sub-steps (e.g., the social system), involved with this process demonstrates just how complex it is to introduce and manage change and why so many mandates ultimately fail to meet expectations. In working through the case study, I found the different stages of the innovation-decision process helpful in articulating what Vincent would need to do to successfully implement the teacher training program. Vincent's meeting with the stakeholders showed the importance of the persuasion stage in influencing the process. "Communication channels," one of the four main elements in the diffusion of innovations, also gave me an idea of how Vincent can use the school intranet as an additional communication source through which "participants create and share information with one another in order to reach a mutual understanding" (Sahin, 2006, p. 1)

Because I've never worked in a K-12 environment, the article by Roehrig, Kruse, and Kern (2007) helped me conceptualize the different elements involved in implementing reform-based practices. In particular, reading about the dynamic interplay between the administration, the teachers, and what the authors refer to as "school characteristics," which encompass school-based leadership and scheduling, helped me prioritize constraints. Effective and efficient scheduling is the key to ensuring that the project has a chance to move past the implementation stage, which is important to continue reducing the uncertainty among teachers as to whether the training will be worthwhile.

Another aspect of the article that informed my solution for Vincent's second ID challenge, which is to design and develop an evaluation plan, is the idea that trying to determine

student achievement levels that occur as a result of reform-based practices requires a more diverse range of evaluation tools such as classroom observations, interviews, and review of classroom materials. Doing so will “provide a better measure of instructional practice and connection to gains in student achievement” (Roehrig, Kruse, & Kern, 2007, p. 885).

How did your previous experiences contribute to your analysis?

Many years ago, I was academic director at a private language school and was responsible for supervising ESL instructors and directing the curriculum. The school decided to use an externally validated English proficiency exam to benchmark students’ English-language skills on entering the program. The students were then assessed as they progressed through the program. The school gave a post-test at the students’ completion of the program to determine the extent to which their English level increased. Prior to the implementation of this external exam, instructors were responsible for creating the language exams. Naturally, the quality and effectiveness of instructor-created exams varied widely, so the school decided to remove instructors from the assessment loop. My task, then, was to implement the externally validated exam.

I knew how the change in assessment would affect our students in terms of it being a beneficial tool to better inform students of the extent to which their English was improving. However, because I was new to supervising others (I had been promoted from the instructor position to academic director), I did not consider how this change would affect the teachers because most of the teachers had been my colleagues for only six months. My approach to implementing the new exam was to issue a top-down directive, which quickly resulted in plummeting teacher morale. Even though the instructors did not always enjoy creating formal exams, they felt that creating the assessments legitimized them professionally. Because they lost

something that they identified as being the teacher's responsibility, they were not willing to go along with the change. Of course, I only realized this after I had so many problems implementing the new exam. Had I been aware of the fact that implementing change at any level involves many moving parts and managing individual agendas and personalities, I would have taken more time to win over the teachers. Therefore, I prioritized addressing the teachers' potential negative attitude toward the training program constraint because they were the ones who would not only need to be motivated to see the change as a positive, but they also have the most direct impact on students and their learning.

4. Possible Solutions

For the task of designing and developing a training program where teachers adapt their current teaching methods to ensure students meet the Common Core standards, Vincent must ensure that he gets the support of the teaching staff, which has been complicated by low motivation and frustration at new directives. Because only four professional development days are allocated for a given school year, Vincent must also create an efficient training schedule. Because four days of efficient training would not be nearly sufficient, Vincent must develop training opportunities in other spaces where teachers can collaborate and apply what they learned in the training. Additionally, because *all* students are required to meet the Common Core standards, Vincent's teacher training program must incorporate a classroom approach that is compatible with teaching special needs students and English language learners. Finally, because Vincent has also been hired to create an evaluation plan that assesses how teachers are adapting their instruction to help students meet the Common Core standards, which are still at least two years away from being fully implemented, he will need to use feedback and data that does not rely on Common Core exam results.

Below are two solutions that attempt to account for these issues.

Solution 1

The training will be structured into two components: principles and application. Principles will focus on developing inquiry-based learning techniques that teachers can use in the classroom to develop the skills and knowledge students will need to measure up to the Common Core performance-based standards. To ensure that special needs students and English language learners benefit from the training, the principles component of the training will also develop the concept of Universal Design for Learning (UDL) for use as a framework in which teachers can create flexible and motivating learning activities that differentiate the needs of individual learners while benefitting all students.

The second component of the teacher training will be the application of inquiry-based learning techniques. The emphasis of this training component is on teachers sharing techniques, materials, observations, progress, and results of the inquiry-based learning instruction and UDL framework implementation. Because the principles component of the training will be conducted during all four professional development days, the application component will be conducted during the school day. This can be accomplished by creating a 40-minute daily session by ending each of the eight class periods five minutes early. These collaboration-enhancement sessions will be held four days per week, with each of the four academic departments (English, science, math, and history) rotating session-facilitating responsibilities; the fifth day will be set aside for individual tutoring, test preparation, or IEP-related issues.

Teacher assessment will be both formative and summative. Formative assessment, which will be quantitative and qualitative in nature, will consist of ongoing evaluation conducted by

teachers themselves and by designated school personnel or, resources permitting, outside consultants. Teachers performing self-evaluation will use assessment instruments that facilitate critical and reflexive analysis of the extent to which they have been able to apply the training in their classroom. Formative evaluation conducted by non-teaching staff will be performed using classroom observations, teacher and student interviews, and a review of classroom materials. Formative evaluation may also include quantitative and qualitative feedback from parents regarding any perceived changes in their children's attitudes or behavior toward schoolwork.

Summative evaluation, which will occur at a designated point after the training program has been completed, will consist of a post-training survey that, when compared to pre-training survey results, will determine the extent to which teachers' knowledge, skills, attitudes, and behavior have changed as a result of the training and the application of inquiry-based learning techniques and materials in the classroom. In the absence of Common Core exam results, a final summative quantitative and qualitative analysis of all completed evaluations such as classroom observations, teacher and student interviews, and review of teaching and learning materials will be conducted and analyzed for any changes in teacher and student classroom performance.

This solution addresses both the design challenges and the different constraints associated with the project in the following ways:

Challenge/Constraint	How Challenge/Constraint is Addressed
ID Challenge 1: Design and develop a program that trains teachers to adapt their current teaching methods to develop the knowledge and skills required for students to meet the new Common Core performance-based standards.	Structuring the training into two separate components to focus both on the principles of inquiry-based learning techniques and on the continuous application of these techniques in the classroom will ensure that both teachers and students become comfortable with inquiry-based learning. In addition to preparing students to meet the Common Core standards, this ongoing application will work toward

	mitigating teacher and student uncertainties regarding the mandate.
Constraint 1: Negative response to the training program from teachers affected by budget cuts and pay rate freezes, who are weary from mandates and initiatives, or both.	Creating a collaborative space, such as the collaboration-enhancement sessions, with teachers who are enthusiastic about working as a team can help overcome the reluctance of other teachers to commit to the training program.
Constraint 2: There are a limited number of professional development hours in which to conduct training.	To make the training more focused and efficient, the program will consist of principles and application. Because the principles training component will be conducted during all four professional development days, the application component of the training will need to be conducted during the school day. This can be accomplished by creating a 40-minute daily collaborative session, four days per week by ending each of the eight class periods five minutes early. To ensure equal participation, session-facilitating responsibilities rotate among the departments.
Constraint 4: The student population that includes a segment with learning disabilities as well as students who are English language learners.	To ensure special needs students and English language learners benefit from the training, the principles component will concurrently develop the concept of UDL to use as a framework in which teachers can create flexible and motivating learning activities that can differentiate between individual learner needs while benefitting all students with rich, student-centered activities.
ID Challenge 2: Design and develop an evaluation plan that measures the effectiveness of teachers in preparing students to meet the Common Core standards.	Teacher evaluations will not be based on student exam results because Common Core testing is still at least two years away. Accordingly, both formative and summative evaluation will be conducted using surveys, classroom observations, interviews, and materials review. Creating a 360-degree evaluation will provide a range of results that

	are a better measurement of the extent to which the teacher training is positively affecting students' knowledge and skills development.
Constraint 5: Vincent will not administer the training and will not learn of student exam results.	Because the bulk of the training will be conducted during the enhancement sections before the start of class each day, it is not necessary for Vincent to be present because these sessions are designed to be collaborative among instructors. Because both formative and summative evaluation will be conducted using surveys, classroom observations, interviews, and materials review, Common Core exam results are not needed to determine how effective the training program has been because the goal of the training is to get teachers to adapt how they are teaching in order to meet the new Common Core standards rather than on getting the students to score a certain percentage on the Common Core-based exam.
Constraint 3: Students need to develop test-taking skills for the Common Core-based exam they will be taking.	With the daily collaboration and enhancement sessions created by shortening each class period by five minutes, a weekly session can be designated for student enhancement in which individual tutoring or test preparation can be conducted, or IEP-related issues can be addressed.

Solution 2

The training program's structure will consist of the same two components proposed for Solution 1: principles and application. However, to ensure that teachers have sufficient time during the school day both to implement new techniques and materials as they teach their classes and to continue to provide test preparation and skills development, the daily class schedule will not be altered. Instead, the school intranet (to which teachers and parents already have access and appear to be comfortable using) will be leveraged to create a virtual space dedicated to

supporting the training. To this end, the content management section will serve as a repository for resources (e.g., articles related to the training and Common Core exam) and teacher-created materials that can be shared; discussion forums will be designated for teachers to post reflections about what they are doing and seeing in the classroom while they implement inquiry-based learning, and to offer suggestions on how to enhance the training or its application in the classroom. A dedicated section will be provided for parents so they can be involved in the process more directly by receiving updates and monitoring the training's progress. Parents will also have a dedicated forum in which to ask questions and provide feedback about what they are hearing or observing from their children at home as it relates to academic progress.

The plan to evaluate teachers will be summative in nature. As proposed in Solution 1, a pre-training survey will be administered to teachers. This pre-training readiness evaluation will determine the teacher's level of conceptual knowledge and skills relating to inquiry-based learning and identify their belief systems regarding teaching and learning in general and, more specifically, the new standards-based training initiative. This score will be benchmarked with a final post-training evaluation, which will occur at a designated point after the training program has been completed. When compared to the pre-training survey results, the post-training evaluation will determine the extent to which teachers' knowledge, skills, attitudes, and behavior have changed as a result of the training and the application of inquiry-based learning techniques and materials in the classroom. In the absence of Common Core exam results, student grades and state exam results will inform a final summative quantitative analysis to determine the extent to which the teacher training has met its intended goal.

This solution addresses both the design challenges and the different constraints associated with the project in the following ways:

Challenge/Constraint	How Challenge/Constraint Is Addressed
<p>ID Challenge 1: Design and develop a program that trains teachers to adapt their current teaching methods to develop the knowledge and skills required for students to meet the new Common Core performance-based standards.</p>	<p>Structuring the training into two components to focus both on the principles of inquiry-based learning techniques and on the continuous application of these techniques in the classroom throughout the training period will ensure that both teachers and students are comfortable with inquiry-based learning. In addition to preparing students to meet the Common Core standards, this ongoing application will work toward mitigating teacher and student uncertainties regarding the mandate.</p>
<p>Constraint 1: Negative response to the training program from teachers affected by budget cuts and pay rate freezes, who are weary from mandates and initiatives, or both.</p>	<p>Diffusion of innovations theory suggested that a social system consisting of positive people with strong beliefs will eventually win over the more reluctant or uncertain members of a group (Sahin, 2006). Creating a collaborative space with teachers who are enthusiastic about working as a team as well as planning and sharing ideas can help overcome the negativity or reluctance of other teachers to commit to the training program.</p>
<p>Constraint 2: There are a limited number of professional development hours in which to conduct training.</p>	<p>The first component of the training, principles, will be conducted using each of the four allocated professional development days. To avoid cutting classes short as proposed in Solution 1, the second component of the training, application, will be conducted using the school intranet. Because teachers and parents already have access to and are familiar with the system, it will be used to create a self-directed, though still collaborative space dedicated to training support.</p>

<p>Constraint 4: The student population that includes a segment with learning disabilities as well as students who are English language learners.</p>	<p>To ensure that special needs students and English language learners also benefit from this training, the principles component of the training will concurrently develop the concept of UDL to use as a framework in which teachers can create flexible and motivating learning activities that can differentiate between individual learner needs while benefitting all students with rich, student-centered activities.</p>
<p>ID Challenge 2: Design and develop an evaluation plan that measures the effectiveness of teachers in preparing students to meet the Common Core standards.</p>	<p>Because Common Core testing is still two years away, Common Core exam results will not be able to be used as a basis to determine the effectiveness of the teacher training primarily. Accordingly, summative evaluation will be conducted using a readiness assessment administered to teachers before the start of training.</p>
<p>Constraint 5: Vincent will not administer the training and will not learn of student exam results.</p>	<p>Because the bulk of the training's application will be documented online in designated sections of the school's intranet, Vincent will not need to be present for the process because it is designed to be collaborative among instructors with administrators and parents able to monitor progress. Because summative evaluation will measure teachers' final knowledge, skills, and attitudes toward training, inquiry-based learning and the Common Core exam results are not needed to determine the training's effectiveness. This is so, because the goal of the training is for teachers to adapt how they are teaching in order to meet the Common Core Standards rather than getting the students to score a certain percentage on the Common Core exam.</p>

<p>Constraint 3: Students need to develop test-taking skills for the Common Core-based exam they will be taking.</p>	<p>Because the training program will not affect students' class time, teachers can continue to provide test preparation and skills development during a normal class period. Because the training will center classroom activities on the development of skills required for performance-based exams, the estimate given by some teachers of 30% of class time being spent on test preparation may be reduced as the training's positive effects on instruction and student learning become more pronounced.</p>
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5. Pros and Cons

Solution 1 Pros

Pro	Result
Training is structured into two components: principles and application.	Separating the focus into two areas allows for more efficient training scheduling because of the limited number of professional development days. The professional development days can be used for principle-focused training (led by a subject-matter expert) and alternate scheduling, in this case the collaboration and enhancement sessions, can be focused on the application of the principles with all of the teaching staff engaging in a hands-on, collaborative effort.
Teachers have the opportunity to work together during the school day.	The opportunity to collaborate with colleagues in a daily enhancement-collaboration period pleases Vice Principal Sanchez and several teachers, such as Joyce and Josie, who also see these sessions as ways to discuss issues related to special needs students and English language learners. Their motivation will serve to get other, more hesitant staff members involved.
Teacher assessment is ongoing throughout the training.	In addition to pre- and post-training assessments and feedback provided by teachers throughout the training, formative evaluations will be conducted by non-teaching staff using classroom observations, teacher and student interviews, and a review of materials used in support of the application

	of inquiry-based learning. This diversity of evaluation will avoid the issues of bias that are inherent to self-evaluation and be more representative of the training's effectiveness (Roehrig et al., 2007).
More one-on-one time for student enhancement.	With the collaboration-enhancement period implemented, four days per week are dedicated to teacher collaboration and one day per week is dedicated to student enhancement, which can be individual tutoring, test-taking skills development, or discussing IEP-related issues.

Solution 1 Cons

Con	Result
Five minutes of class time will be cut from each period per day to create the enhancement-collaboration period.	Teachers may not always be able to finish teaching their daily lessons, complete math practice, or science lab work within the reduced class time.
Parents won't have a direct way to participate in preparing their children for the new performance-based standards.	Parents may feel alienated from the process and, consequently, not be able to reinforce what their children are learning in the classroom.

Solution 2 Pros

Pro	Result
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Training is structured into two components: principles and application.	Separating the focus into two areas allows for more efficient training scheduling because of the limited number of professional development days. The professional development days can be used for principles-focused training (led by a subject-matter expert) and the application of the principles can be moderated through the school's intranet.
The training program will not cut classroom time for teachers or students.	Teachers will be able teach lessons using the entire 45-minute classroom period. As a result, lab work and math practice will not be cut short, and teachers may continue providing test-taking skills practice without worrying about reduced class time.
Parents can more actively participate in the standards implementation process as it relates to their child.	With the application component of the training program designed to be done using the school intranet, a dedicated section can be created for parents so that they can be more directly involved in the new standards implementation process by receiving updates on what is being done and by being able to monitor the training as it is being implemented. Parents will also have a dedicated forum to ask questions and provide feedback about what they are hearing or observing from their children at home as it relates to their academic progress.

Solution 2 Cons

Con	Result
Teachers will not have the opportunity to work together regularly during the school day.	Because the application component of the training will occur through the school's intranet, there will not be much face-to-face interaction among teachers. This face-to-face interaction is important for creating and sustaining a support system that can help reduce the uncertainty some teachers may have about the new initiative or the purpose of the training program itself.

Using the intranet for a main component (application) of the training.	Relying on the intranet to manage a main component of the training will require a full-time moderator from the school to keep the materials organized, the discussion facilitated, and any questions answered. Although staff have indicated that they are comfortable using the intranet for reading messages, inputting grades, and managing class assignments, using the system more extensively may require additional technical training for some teachers who are not as comfortable using a web-based system.
No formative evaluation of teachers.	Relying primarily on summative evaluation will require that the evaluation plan incorporate test scores, which serve to identify increased student achievement, to justify improved instructional techniques. One teacher (Edward) has indicated that using exam results to determine if the teacher is “doing a good job” is anxiety-inducing. A range of formative evaluation data would provide more balanced, meaningful data that could better determine the extent to which the teacher training has been successful in getting teachers to adapt how they are teaching to ensure their students meet the Common Core standards. However, due to the nature of the online “application” component of the training, which is to be conducted through the school intranet, online assessment tools may need to be designed and developed.

6. Final Recommendation

My final recommendation would be use Solution 1 and design a training program consisting of two components, one of which can be conducted using the allotted professional development days, and the other carried out in daily enhancement-collaboration sessions, which can be created by trimming five minutes from each class period. Diffusion of innovations theory suggests that a social system consisting of positive members with strong beliefs will eventually

win over the more reluctant or uncertain members to accomplish a common goal; this reduction of uncertainties is central to the innovation-diffusion process and the ultimate success of the adoption of any innovation (Sahin, 2006). The advantage of this solution is the daily face-to-face collaboration sessions that bring teachers together into a physical space (as opposed to the online virtual space—the intranet—proposed in Solution 2) to share ideas, materials, and concerns. The hope is that teachers who are enthusiastic about working collaboratively can help other teachers overcome their reluctance to commit to the training program.

Another benefit of Solution 1 is the more comprehensive teacher assessment plan. In addition to a summative evaluation that focuses on the extent to which teachers' knowledge, skills, attitudes, and behavior have changed as a result of the training and the application of inquiry-based learning techniques and materials in the classroom, the evaluation plan presented in Solution 1 accounts for a range of formative evaluation instruments. When taken together, these evaluations yield a range of results that are a better measurement of the extent to which teachers have adapted their teaching to positively affect the knowledge and skills development that students will need to meet the Common Core standards.

The primary negative associated with this solution is the result of the proposed collaboration-enhancement sessions, which require each class to be shortened by five minutes. Although some teachers will think that they would not have enough time to teach their lessons, Vincent's research revealed that teacher efficiency and student achievement could be improved through 40-minute enhancement periods before the first class of the day.

The other con associated with this solution is that parents would not have a direct way to participate in helping prepare their children for the Common Core standards as they would in Solution 2. However, because parents already have access to the school's intranet, a dedicated

section could be created so that parents can view progress notes, updates, and even post questions or provide feedback on what they have observed about their children's performance while at home.

References

- Roehrig, G. H., Kruse, R. A., & Kern, A. (2007). Teacher and school characteristics and their influence on curriculum implementation. *Journal of Research in Science Teaching*, 44(7), 883–907.
- Sahin, I. (2006). Detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. *The Turkish Online Journal of Educational Technology*, 5(2).