Using the Concerns Based Adoption Model (CBAM) to accelerate understanding by design implementation

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ABSTRACT

The Concerns Based Adoption Model (CBAM) is the instrument used in this case study to evaluate the efficacy of the Understanding by Design (UbD) instructional framework implementation plan. Specifically, to evaluate the implementation process through teacher perceptions of local instructional reform. Data was used to determine what further local interventions are necessary to sustain usage of the pedagogical practice. The goal of transferring understanding from one key idea, in one discipline, to a wider scope with the intent of deepening student understanding. This evaluation will determine its positive impact on learning. Sustained through research in cognitive psychology and advocated by constructivist educational theorists, the UbD instructional framework was created as a vehicle for this pedagogical practice. The success of the UbD framework implementation plan can only be achieved if teachers fully understand its impact on learning and support the initiative in their classroom. Then they must be willing to re-evaluate and transform their pedagogical practice where necessary.

The CBAM study encourages the recognition that change is a process, not an event. The existence of an "implementation bridge," first mentioned by Hall and Hord (2006), would serve as a path to guide each individual from their first introduction of the new program, UbD, to the attainment of anticipated student outcomes in all classrooms. Individuals need to allow themselves to be guided across the bridge by administration, which is tasked with providing what each individual staff member needs to successfully cross the bridge.

Keywords: Change Principles, Educational Reform, Understanding by Design, Concerns Based Adoption Model, Transfer

INTRODUCTION

The support for the Understanding by Design (UbD) constructivist instructional framework, and its guided implementation within school districts, has been occurring over the last several decades. When district administration develops, and/or approves, a vision for instructional reform such as UbD, it is really just the first step toward efficacy. The implementation plan is only as effective as it is supported by teachers and utilized within each classroom. This next step became part of a case study that was evaluated through teacher perceptions of the UbD instructional framework and their role in the implementation plan.

If teaching for meaning and understanding is prioritized universally in national, state, and local education reform, the efficacy of an implementation plan which guides the transformation of a school system to reach that goal is worth evaluating. Specifically, "What local interventions are needed to accelerate the pattern of adoption and effective use of the Understanding by Design instructional framework?" (Young, 2005, p. 43) How can teachers be guided to determine that teaching for learning and understanding, by transferring knowledge, is at the core of strong instructional design. How can administrators support teacher efforts to understand, and implement, the framework?

"Transfer" is defined as the ability to apply knowledge or procedures learned in one context to new contexts (Lightner, Bernander, & Kramer, 2008). Student and faculty attitudes toward participating in transfer activities, existing pedagogical initiatives, and the district approach toward professional development are current barriers to educating for meaning and understanding through transfer (Lightner, Benander, & Kramer, 2008). Additionally, a 2005 study determined that teachers have difficulty modeling transfer of instructional outcomes they practice in professional development. It is not uncommon for teachers to take lessons or activities from professional development into their classroom, often to ill effect. However emphasis on modeling, transfer, and demonstrating those intended outcomes is valuable in that

> …cognitive psychology research indicates that student learning is enhanced when students are able to explore, organize, connect, process, and apply information and ideas….When students are engaged in the learning process through the use of authentic pedagogy and academic performance tasks that enable them to apply their learning. (McTighe & Seif, 2011, p. 11)

These ideas have been developed by Grant Wiggins and Jay McTighe into their Understanding by Design (UbD) framework, which encourages educating for meaning and understanding to improve student achievement. The terms "meaning" and "understanding" are identified as the ability to

> …put facts into a larger context, inquire into 'essential' questions, and apply learning in authentic situations. In order for students to become knowledgeable and competent in a field of study, they should not only develop a solid foundation of factual knowledge but also develop a conceptual framework of concepts and ideas that facilitates meaningful learning. (McTighe & Wiggins, 2013, p. 7)

UbD prioritizes student ability to demonstrate student understanding through transfer. Grant Wiggins and Jay McTighe outline the long-term purpose of schooling:

> [T]he mission of high school is not to cover content, but rather to help learners become thoughtful about, and productive with, content. It's not to help students get good at school, but rather to prepare them for the world beyond school, to enable them to apply

what they have learned to issues and problems they will face in the future. The entire high school curriculum, course syllabi, instruction, and especially assessment must reflect this central mission, which we call learning for understanding. Learning for understanding requires that curriculum and instruction address three different but interrelated academic goals: helping students 1. acquire important information and skills, 2. make meaning of that content, and 3. effectively transfer their learning to new situations both within school and beyond it" (Wiggins & McTighe, 2008, p. 37).

Since developing students to be college and career ready and preparing them for a world beyond school became a conscious instructional objective in recent years. The creation of an instructional framework to support this objective is a logical next step for districts.

The Concerns Based Adoption Model (CBAM) is a conceptual framework used to study the process of implementing change. In this case, the introduction and implementation of the Understanding by Design (UbD) instructional framework by teachers, in the role of change facilitators, will be measured. The theoretical context for the model can be found in the work of counseling psychologist Frances Fuller's sequential developmental concept of concerns (1969). As highlighted in Dr. Young's 2005 work, *Understanding by design: An action plan for implementation:*

Fuller conducted research on the concerns of student teachers and developed a model based on her empirical finding that student teachers' concerns moved through a natural development sequence of four stages: unrelated, self, task, and impact. Unrelated concerns are personal in nature and do not address the concerns of the teaching practice. Self-concerns, although focused on teaching practice, are egocentric in nature. Task concerns are logistical in nature, that is, they are directed towards the mechanics of instructional delivery. Impact concerns, the highest level in Fuller's hierarchy, address the impact of teaching practice on students. (Young, 2005, p. 49)

[The] Concerns Based Adoption Model was based on several important assumptions about the nature of change. These assumptions are:

1. Change is a process, not an event. 2. Change is accomplished by individuals. 3. Change is a highly personal experience. 4. Change involves developmental growth in feelings and skills. 5. Change can be facilitated by interventions directed toward the individuals, innovations, and contexts involved. (Hall & Hord, 1987)

A level of consciousness on this change scale, regarding where an individual is categorized, needs to occur before any type of constructive reform can be experienced.

Hall and Hord (1987) noted that educational reforms are often not implemented in the time frame envisioned by planners and policymakers. While that may be the result of structure or planning problems, resistance to change, not unique to educational settings, is frequently a factor in timing of implementations (Christou et al., 2004). Both of these observations reinforce the importance of investigating the nature of teacher concerns during the innovation process. Loucks-Horsley (1996), one of the original test developers, points out that learning brings change, and supporting people during change is critical to facilitating the change taking hold. It is, therefore, helpful that the CBAM applies to anyone experiencing change, be they policymakers, teachers, parents, or students. Most users of CBAM believe all people experiencing change evolve in the kinds of questions they ask and in their use of whatever the change is. CBAM allows identification of the stage and helps leaders prepare to meet the needs of the adopters. Later research suggests not all teachers progress through all stages. Some

become comfortable with the innovation (Stage 3) and do not progress to concern regarding impact on students (Stage 4 and beyond; Anderson, 1997). Malmgren, 2010, p. 73)

THE UNDERSTANDING BY DESIGN INSTRUCTIONAL FRAMEWORK

The Understanding by Design instructional framework facilitates the adoption of those indicators to assess student learning. It is a way of thinking more purposefully and carefully about the nature of any design that has understanding as the goal. The framework demands that all instructional design consider the following criteria in this order: 1. Identify desired results; 2. Determine assessment evidence; 3. Construct a learning plan to provide the foundational concepts, content, and skills students need to achieve the desired results by providing the identified assessment evidence.

> In stage 1 we consider our goals, examine established content standards, and review curriculum expectations….The backward design orientation suggests that we think about a unit or course in terms of the collected assessment evidence needed to document and validate that the desired learning has been achieved, not simply as content to be covered or as a series of learning activities. This approach encourages teachers and curriculum planners to first 'think like an assessor' before designing specific units and lessons, and thus to consider up front how they will determine if students have attained the desired understandings….What enabling knowledge (facts, concepts, and principles) and skills (processes, procedures, and strategies) will students need in order to perform effectively and achieve desired results? What activities will equip students with the needed knowledge and skills? What will need to be taught and coached, and how should it be taught in light of performance goals? What materials and resources are best suited to accomplish these goals? (Wiggins & McTighe, 2005, p. 19)

> Birchfield School District's Understanding by Design implementation plan consisted of a purposeful approach over a period of several years. It began with meetings including district and high school administration to construct the plan to engage in work that takes a comprehensive look at how curriculum maps are designed, how lessons are planned, and how assessments and rubrics are designed. Discussion and training followed with select teachers representing 1/3 of the faculty and all instructional disciplines. Shortly after the training, a presentation on Understanding by Design was introduced to the entire faculty. A UbD committee was created with the guiding idea that lesson design, instruction, and assessment should emphasize critical thinking skills, problem solving, collaboration, effective communication, and the ability for students to access and analyze information. The committee developed a plan of action, through shared decision making, where the teachers of Birchfield High School could collaborate to identify desired results, determine acceptable evidence, and plan learning experiences and instructional activities.

CONCERNS BASED ADOPTION MODEL

In order for any instructional initiative to be successful, teachers need to express a level of interest in the initiative's success. "Teachers' concerns have been conceptualized as classifiable into two types: concerns about benefit to self and concerns about benefit to pupils (Fuller, 1969)." (Fuller, 1974, p.1). "Concerns about teaching are expressions of felt need which probably possess motivation for relevant learning. Consequently, any regularities in the concerns

of teachers are of interest to teacher educators. If motivation is to be harnessed for learning, curricula should consider the felt needs or concerns of teachers" (Fuller, 1974, p.2). Review of Irene Malmgren's 2010 study of faculty development in community college teachers in learning community teaching teams using the Concerns Based Adoption Model (CBAM). The CBAM recognizes the components of change which need to be identified for successful reform to occur.

LEADERSHIP THEORY AND INITAITING CHANGE

Teacher progression through these concerns can be supported through a clear districtwide vision.

> Visions that are truly shared take time to emerge. They grow as a by-product of interactions and individual visions. Experiences suggests that visions that are genuinely shared require ongoing conversation where individuals not only feel free to express their dreams, but learn how to listen to each other's dreams. Out of this listening, new insights into what is possible gradually emerge. (Senge, 1990, p. 202)

Collaboration and feedback were two identified components to the UbD implementation plan. Shared vision is also embedded in the change principles developed by Gene Hall and Shirley Hord (2006) in *Implementing Change: Patterns, Principles and Potholes*.

The results of their study on change principles and their use of the Concerns Based Adoption Model (CBAM) to evaluate feedback regarding change initiatives is the established model used in this study. Particular attention is devoted to the emphasis on the complex nature of change.

> One important result of our long-term collaborative research agenda is that we can now draw some conclusions about what happens when people and organizations are engaged in change. A number of patterns have been observed repeatedly, and some have developed into major themes or basic principles….We need to emphasize that all levels individual, organizational, and system change is highly complex, multivariate, and dynamic. (Hall & Hord, 2006, p. 8)

Acknowledgement of this truth led to their development of 11 change principles. When those principles are deconstructed through the process of analysis of this study, efficacy of the Understanding by Design (UbD) implementation process will be measured.

Change Principles

Local interventions which adhere to change principles encourage a supportive culture with clear protocols to follow, allowing support for educators crossing the "implementation bridge." The goal of the first two principles is to identify what change is. *Change Principle 1: Change is Learning* emphasizes the importance of learning within the change process, by acknowledging the importance of professional development and also by maintaining a level of discipline when enacting change. "In most settings most of the time there is more than one change process unfolding at the same time. This means more opportunities for learning. It also represents the potential of there being more confusion, less change success and less learning." (Hall & Hord, 2006, p. 9) *Change Principle 2: Change is a Process, Not an Event* moves beyond the acknowledgement that not only does learning need to occur within the organization, but that change is a process that needs to be cultivated over a period of time. "Our research and that of others documents that most changes in education take three to five years to be implemented at a

high level (for example, see George, Hall, & Uchiyama, 2000; Hall & Loucks, 1977; Hall & Rutherford, 1976). Failure to address key aspects of the change process can either add years to, or even prevent, the achievement of successful implementation" (Hall & Hord, 2006, p. 11). Leaders are encouraged to use caution to not confuse "resistance" with "grief" when leading the process of implementing an initiative. "Chances are that when people must change, they stop doing things that they know how to do well and in fact like doing, which creates a sense of sadness. What many leaders see as resistance to change may in large part be grief over the loss of favorite and comfortable ways of acting (Bridges, 2009)" (Hall & Hord, 2006, p. 11).

There are clear protocols regarding how organizations and individuals approach and support change. *Change Principle 3: The School is the Primary Organizational Unit for Change* spotlights the school as the facility where the process of change occurs, but acknowledgement of the school's role within the larger system (district, state, and federal educational system) must be considered. "Change processes are easier and chances of sustained success are increased as the school staff understands more about how to use external resources. Change becomes easier as those external to the school recognize the importance of their roles in facilitating change success in each school" (Hall & Hord, 2006, p. 12) The understanding of the existence, and usage, of external resources will enable a tailored approach to intervening with individuals with the goal of developing personal mastery of the initiative.

Many of the same interventions, such as providing teachers (and principles) with professional learning about their role in the innovation, can in fact be made throughout the district, especially during the first year of implementation. However, by the second year and beyond, different schools will be moving at different rates and will have different change successes and challenges. Thus, at least some of the key interventions will need to be uniquely targeted for each school. (Hall & Hord, 2006, p. 12)

Change Principle 4: Organizations Adopt Change- Individuals Implement Change emphasizes the importance of focusing on the individuals tasked with carrying out the change:

> [T]here is an individual aspect to organizational change. Even when the change is introduced to every member of the organization at the same time, the rate of learning to make the change and of developing skill and competence in using it will vary individually. Some people will grasp the new way immediately, although most will need some additional time, and a few will avoid making change for a very long time….One implication of this principle is that leaders of organizational change processes need to devise ways to anticipate and facilitate change at the individual level. (Hall & Hord, 2006, p. 12)

Discussion regarding the use of a visual "Implementation Bridge" between a new initiative (UbD) and the expected student outcomes is necessary.

> "Without an "Implementation Bridge," there is little reason to expect positive change in outcomes. Instead, there are likely to be casualties as attempts to make the giant leap fail. Individuals and whole organizations may fall into the chasm." (Hall & Hord, 2006, p. 14)

The purpose of the intervention process is to prevent those tasked with carrying out the innovation from "falling into the chasm." *Change Principle 5: Interventions Are Key to the Success of the Change Process* when attempting to bring all members of the organization across the "Implementation Bridge." The interventions that are developed by the change leaders, on both a large and small scale, will ultimately determine the level of efficacy achieved when implementing the change.

As individuals plan to lead change processes, they tend to be preoccupied with the innovation and its use. They often do not think about the various actions and events that they and others could take to influence the process; these actions are known as interventions….Although workshops are important…some other interventions are even more crucial to achieving change success. (Hall & Hord, 2006, p. 14)

Change Principle 6: Appropriate Interventions Reduce Resistance to Change emphasizes how important it is for change leaders to diagnose appropriate interventions needed during the implementation process.

Often what appears to be resistance is the individual working through the sense of loss for having to stop doing something that was comfortable. A second form of resistance is grounded in having serious questions about whether the change will really be an improvement. This questioning may be due to limited understanding about the change, or it may be based on solid reasoning and evidence….To address these concerns requires very different interventions. If the process is facilitated well, learning about the change and its implementation can be productive, and it certainly does not have to hurt or even be dreaded. Of course, there are moments of frustration and times of grieving over what is being lost. However, if there is a major pain in change, chances are strong that the leadership for change has not understood what is entailed and required to facilitate the process well. (Hall & Hord, 2006, p. 15)

The next three change principles focus on the role of leadership in the change process. *Change Principle 7: District- and School-Based Leadership Is Essential to Long-Term Change Success* highlights the level of leadership support necessary, not only in the institution initiating the change, but within the external organizations which have influence over the facility carrying out the change. *Change Principle 8: Facilitating Change is a Team Effort* supports emphasis on shared decision making when enacting change. Administrators must empower those tasked with being the change agents.

Administrators and staff in the school district office can make important contributions to efforts to move across the 'Implementation Bridge.' Each of these 'external' roles can, and do, make significant differences in the degree of success of change. Colleagues in a school make a difference too, as they learn about the change together. When teachers and others inside the organization share successes and challenges, implementation efforts can be more successful. (Hall & Hord, 2006, p. 17)

Additionally, *Change Principle 9: Mandates Can Work* supports the point that although it will be easier to get more people across the "Implementation Bridge" through collaboration, a mandate by leadership would reinforce that the initiative is priority and there are clear expectation regarding the implementation of the initiative.

The mandate strategy fails when the only time the change process is supported is at the initial announcement of the mandate. When a mandate is accompanied by continuing communication, ongoing learning, on-site coaching, and time for implementation, it can work. As with many change strategies, the mandate has garnered a bad name- but not because the strategy itself is flawed, but because it is not supported over time with the other necessary interventions. (Hall & Hord, 2006, p. 18)

It is more likely for the change to become successful if the internal and external factors are acknowledged, regarded, and considered for their role in supporting or hindering the initiative. *Change Principle 10: Both Internal and External Factors Greatly Influence Implementation Success*:

The organization culture and related norms are a set of internal factors that most certainly affect change success…The amount of direct support and advocacy from supervisors, such as district superintendents, are key factors. At the same time, as important and influential as these external factors may be, there are significant differences in how the people internal to the school interpret them. In some schools, external factors drive everything: 'The state makes us do this.' In other schools within the same external environment, the internal interpretations can be quite different: 'This is the policy. However, it doesn't say that we can't do it this other way.' (Hall & Hord, 2006, p. 18)

The last two change principles reinforce some of the change principles mentioned with the goal of fostering success. *Change Principle 11: Adopting, Implementing, and Sustaining Are Different Phases of the Change Process.* This change principle focusing on the work that needs to continue once the individuals cross the "Implementation Bridge."

There is a rich history of research related to adoption and implementation. We know a lot about how to facilitate implementers moving onto and across the bridge. We have a lot less experience with understanding how to sustain use of the new way. Staying across the bridge and continuing to use the new way with quality requires structural changes as well as ongoing attention by both internal and external leaders. (Hall & Hord, 2006, p. 19)

Change Principle 12: And Finally, Focus! Focus! Focus! reiterates some of the points mentioned in Change Principles 1 and 2. In order for implementation to be sustained, "learning" and "process" must be emphasized. Specifically evaluative measures must be used throughout the change process to determine levels of success within the implementation initiative and where interventions need to be established.

Methods of Measuring Staff Concerns

Gene Hall tested the validity of the Stages of Concern (SoC) Questionnaire in his 1977 publication, *Measuring Stages of Concern about the Innovation: A Manual for the Use of the SoC Questionnaire*:

The validity of the scores on the SoC questionnaire as measures of the defined Stages of Concern could not be demonstrated as easily as could their reliability. There does not exist another measure of concerns with which the SoC Questionnaire could be compared easily. Following the strategy outlined by Cronbach and Meehl (1955), an attempt was made to demonstrate that scores on the questionnaire relate to each other and to other variables as concerns theory would suggest. Thus, inter-correlation matrices, judgments of concern based on interview data, and confirmation of expected group differences and changes over time have been used to investigate the validity of the SoC questionnaire scores. (Hall, 1977, p. 12)

"Reliability, as used in research, refers to the consistency of scores or answers provided by an instrument." (Fraenkel & Wallen, 2009, p.162) Hall accounts for this by identifying that the items representing each stage on the questionnaire were selected in such a manner that high internal reliability was very likely. One of the necessary conditions for an item to be included was that responses to it correlate more highly with responses to other items measuring the same stage than with responses to items on other scales. (Hall, 1977, p. 10)

Similar studies have identified the limited scope of the study, particularly if the CBAM was applied to a single case study to help guide an action plan for a particular school. Based on the concerns and limitations expressed in Stephen Young's action plan (2005), his faculty expressed concerns regarding the "aggressiveness" of the action plan. If there was the perception

of similar aggressiveness in the implementation of the instructional framework, the effectiveness of the implementation could be negatively impacted through no fault of the teacher.

Findings from Birchfield High School

Birchfield High School began to train teachers and administrators in the Understanding by Design (UbD) instructional framework in February 2013 after the implementation of UbD was approved by district administration which had agreed to provide resources to support the initiative. A UbD committee was formed, chaired by this researcher, with a representative from each instructional department (social studies, English, math, science, world languages, music, art, business, guidance, physical education, and special education). The guiding idea developed by the committee was to consciously discuss the goal of designing lessons, instruction, and assessment that will emphasize critical thinking skills, problem solving, collaboration, effective communication, and the ability for students to access and analyze information. If students are to have opportunities for success by demonstrating their abilities in content understanding, conceptual connections, and through skill development, current practices of curriculum design and assessment need to be re-evaluated to ensure that the three stages are intentionally present: 1. Identifying desired results through what the students should know, understand, and be able to do. 2. Determine acceptable evidence (both formative and summative evidence) to assess student achievement of these results. 3. Design learning activities, and identify resources needed, to ensure the mastery of desired results by all students as expressed by their success on the assessment tasks.

The guiding idea was then shared with all Birchfield High School faculty by the department leadership. Full training was provided on two separate dates with a UbD expert who had been trained by Wiggins and McTighe. The March 6, 2013, training was attended by the Birchfield High School principal, three assistant principals, the curriculum administrator of each instructional department, and lead teachers for each department (14 teachers). The full day training was attended by an additional 32 teachers representing all instructional departments. At the previous faculty meeting, the principal of Birchfield High School presented an overview of Understanding by Design to the entire faculty, including the 7 key tenets of Understanding by Design:

> 1. UbD is a way of thinking purposefully about curricular planning, not a rigid program or prescriptive recipe.
> 2. A primary goal of UbD is developing and deepening student understanding: the ability to make meaning of learning via 'big ideas' and transfer learning.
> 3. Understanding is revealed when students autonomously make sense of and transfer their learning through authentic performance. Six facets of understanding- the capacity to explain, interpret, apply, shift perspective, empathize, and self assess- serve as indicators of understanding.
> 4. Effective curriculum is planned 'backward' from long term desired results through a three-stage design process (Desired Results, Evidence, Learning Plan). This process helps to avoid the twin problems of 'textbook coverage' and 'activity oriented' teaching in which no clear priorities and purposes are apparent.

5. Teachers are coaches of understanding, not mere purveyors of content or activity. They focus on ensuring learning, not just teaching (and assuming that what was taught was learned); they always aim- and check- for successful meaning making and transfer by the learner.
6. Regular reviews of units and curriculum against design standards enhance curricular quality and effectiveness.
7. UbD reflects a continuous improvement approach to achievement. The results of our designs- student performance- inform needs adjustments in curriculum as well as instruction.
(McTighe & Reese, 2013, p. 3)

Teachers from each department were provided with release time during the school day to collaborate and create units. Over $25,000 in summer curriculum writing funding was approved by Birchfield School District to create units using the UbD template, with one of the 46 teachers who were trained serving as lead writer for each project in a specific content area. The result of the summer curriculum writing was the development of unit plans that included desired results, assessment evidence, and a learning plan for 11 units related to the subjects of Italian, Chemistry, Physical Education, Health, English, Physics, Global History, and U.S. History. Throughout the 2013-2014 and 2014-2015 school years, teachers were provided with time during professional development days, release time during the school day, time during department meetings, professional development time, and compensation for curriculum writing during the summer. During the November 2013 conference day, the superintendent of Birchfield School District addressed the entire high school staff to express support for the implementation of the UbD instructional framework. In late November 2013, this researcher, along with the Birchfield High School principal, presented the progress and anticipated impact of the UbD initiative to the Birchfield School District Board of Education.

The spring of 2015, data was acquired to evaluate the efficacy of the UbD implementation plan evaluated through teacher perceptions and practices in Birchfield High School. Teacher understanding of, and level of implementation regarding, the UbD instructional framework were investigated through the use of the Concerns Based Adoption Model which include: *Stages of Concern* instrument to evaluate the level of teacher concern with the implementation of the initiative. The concern is measured through three levels: 1. Concern for Self, 2. Concern for Task, 3. Concern for Impact; *Levels of Use* of UbD within instructional planning and practice was measured through survey and interview; and *Local Interventions* to advance the usage of the UbD instructional framework was measured through survey as well.

The results of the survey were then graphed on a Stage 0 to Stage 6 continuum. Stage 0 scores provide an indication of the degree of priority the respondent is placing on the innovation and the relative intensity of concern about the innovation. Stage 0 does not provide information about whether the respondent is a user or nonuser; instead, Stage 0 addresses the degree of interest in and engagement with the innovation in comparison to other tasks, activities, and efforts of the respondent. A low score on Stage 0 is an indication that the innovation is of high priority and central to the thinking and work of the respondent. The higher the Stage 0 score, the more the respondent is indicating that there are a number of other initiatives, tasks, and activities that are of concern to him or her. In other words, the innovation is not the only thing the respondent is concerned

about. Demographic data and outside judgment are needed to determine whether an individual is using the innovation.

A high score in Stage 1 (Informational) indicates that the respondent would like to know more about the innovation. People with high Stage 1 concerns simply want more information. They are not concerned about "nitty-gritty" details but, rather, want fundamental information about what the innovation is, what it will do, and what its use will involve. Stage 1 concerns are substantive in nature, focusing on the structure and function of the innovation. The score in this stage does not indicate how much knowledge or understanding respondents have. It indicates whether they want to know more. Stage 2 (Personal) concerns deal with what Frances Fuller (1969) referred to as self-concerns. A high Stage 2 percentile score indicates ego-oriented questions and uncertainties. Respondents are most concerned about status, rewards, and what effects the innovation might have on them. A respondent with relatively intense personal concerns might, in effect, block out more substantive concerns about the innovation. A high Stage 3 (Management) score indicates intense concern about management, time, and logistical aspects of the innovation. Descriptions and interpretations of peak scores on Stages 4 (Consequence), 5 (Collaboration), and 6 (Refocusing) follow directly from the definition of each stage. The higher the score, the more intense the concerns are on that stage. (George, Hall, & Stiegelbauer, 2006, p. 33-34)

Seventy-three percent of the Birchfield teachers who responded to the *Stages of Concern* survey completed the *Levels of Use* "yes/no" responses (see Figure 1). Eight-five percent of the respondents stated that they are currently using UbD in their instructional planning. Additionally, 91% also believe that they are consistently making instructional decisions based on knowledge of short- and long- term consequences of students, and 87% claim that they consistently re-evaluate the quality of use of UbD and possible modifications to it to achieve an increased impact on students. However, only 48% claim to consistently collaborate with colleagues regarding their use of UbD, with only 63% re-evaluating the quality of UbD to achieve an increased impact as it relates to new federal, state, and/or local instructional goals.

The results of (Figure 2) represent 53 teachers from Birchfield High School who agreed to participate in the study, which is 30% of the 175 teachers employed at Birchfield High School, at the time of the study. The profile depicts a group of educators who are somewhat concerned about other initiatives.

Because Stages 1 and 2 are also high, however, it can be inferred that (Birchfield High School) is interested in learning more about the innovation (UbD). The high school does not have significant management concerns (signified by medium intensity on Stage 3) and is not intensely concerned about the innovations' consequences for students. (George, Hall, & Stiegelbauer, 2006, p. 39)

The results for Birchfield High School also show increased results for Stage 5 "Collaboration," indicating that the staff is interested in working with their colleagues in coordinating the use of the innovation.

Teachers from Birchfield High School overwhelmingly selected Stage 0 as their second highest stage of concern regarding UbD implementation which, again, indicates that there are

other initiatives which exist that are concerning them. The results show that there are also a high number of participants who either want more information, or have ego questions and uncertainties. Stage 6 (Collaboration) was well represented in Figure 3, which is defined as interest in working with other teachers to improve benefits of the change. When teachers were asked, "What specific things would have to be in place for you to feel more positively about the implementation and use of Understanding by Design (UbD)?" The following responses, from six different anonymous teachers, seem to support the survey results. Specifically, that there are other initiatives that exist, they want more information, but would be willing to collaborate:

- "There's just so much going in. Hard to really focus on UbD. I use some parts but am not utilizing it entirely."
- "Let's deal with one change at a time - Common Core alignment, then universal acceleration for all in grades 9 and 10, then UbD."
- "Allow more common planning time. If the district wants UbD lessons written in this planning time, then make it clear. Often the directive is wishy washy. Choose one plan and stick with it. Recently we spent two meetings talking about literacy, and we were given strategies similar to UbD, yet different, so what do you want us to do? Too much information is overwhelming and confusing. Bottom line, more time and a clear directive."
- "The best thing to help with the implementation of UbD and having a more positive response would be more collaborative time with colleagues to plan more units and assess where in the curriculum transfer tasks and projects can be placed."
- "To be successful, UbD needs to be integrated as the central theme for teaching." An illustration of what I mean by a recent example: we just had two sessions on literacy. Why wasn't that placed in a context of UbD? Now UbD and literacy are perceived as disjoint, possibly competing initiatives, each taking resources."
- "I feel like having teams like in the middle school where the teachers have a common prep period would be ideal. Working together once every few months for a few hours doesn't ingrain UbD into our daily routines."

After accumulating data regarding the *Stage of Concern* and *Level of Use* of the UbD instructional framework at Birchfield High School, a follow up survey was emailed to the faculty at both schools to gather information regarding what *Local Interventions* would need to occur to continue the UbD implementation process. The data was collected by teachers answering one question, "What kind of professional development do you need in order to advance your uses of the Understanding by Design framework?" There were six options provided: Informational Workshops; Interactive Workshops; Peer Study Groups; Mentoring or Coaching Relationships; Content Experts; Paired Collaboration. For each of those six possible *Local Interventions*, the teachers were asked to select: Lowest Priority; Low Priority; Moderate-Low Priority; Moderate-High Priority; High Priority; Highest Priority. 58 teachers from Birchfield High School agreed to participate in the *Local Interventions* survey. This represents 33% of the entire Birchfield High School teaching staff and is 109% of the 53 teachers who agreed to participate in the initial *Stages of Concern* survey. The 109% response to the *Local Interventions* survey, when compared to the *Stages of Concern* survey, indicates a significant concern within Birchfield High School regarding the next steps of this initiative. The results (Figure 4) of the *Local Interventions* survey were based on assigning a number to each response: Lowest Priority =1; Low Priority= 2; Moderate-Low Priority= 3; Moderate-High Priority= 4; High Priority= 5; Highest Priority= 6.

The results of this survey indicate that teachers in Birchfield High School feel most strongly about participating in interactive workshops where teachers can get specific guidance regarding a particular component of the UbD instructional framework. A score of 4 indicates a "moderate-high priority," and Birchfield High School scored a 4.31 for Interactive Workshops. The highest priority for the continued implementation of the UbD framework is "Paired Collaboration," where teachers are expected to work through the application of UbD principles with a peer. Peer study groups and content experts to explore big ideas as well as key concepts related to a specific discipline scored at least "moderate-high priority." In addition, "Content Experts" and "Mentors or Coaches to Model UbD" also scored as at least a "moderate-high priority."

The intention of this study was to evaluate how using the Concerns Based Adoption Model (CBAM) could accelerate UbD implementation. The reason why UbD was selected as the initiative to be studied, using the CBAM conceptual framework, was due to the impact understanding based instructional design would be expected to have on student learning and subsequent assessment results. School reform in the 21st century emphasizes the initiative to create learners who are college and career ready through the development of skills and understandings. The nuances of the concepts, content, and skills that create students who are college and career ready have been identified, debated, and analyzed through the Common Core Learning Standards, College Board's Advanced Placement program, the International Baccalaureate program, and through commentary on educational reform by constructivist educational theorists Tony Wagner, Yong Zhao, Daniel Pink, Anthony Bryk, and others. The consensus seems to be that student demonstration of being college and career ready can be attained through the application of learned content to prior knowledge to demonstrate understanding. This is based on research in cognitive psychology, which has determined that for students to become knowledgeable, a conceptual framework of concepts and ideas that facilitates meaningful learning needs to be developed. The UbD instructional framework facilitates the adoption of those indicators to assess student learning. The framework demands that all instructional design consider the following criteria in this order: 1. Identify desired results; 2. Determine assessment evidence; 3. Construct a learning plan to provide the foundational concepts, content, and skills students need to achieve the desired results by providing the identified assessment evidence.

CBAM was selected as the conceptual framework because it is used to study the process of implementing change. In this case, the introduction and implementation of the Understanding by Design (UbD) instructional framework by teachers. The theoretical context for the model can be found in the work of counseling psychologist Frances Fuller's sequential developmental concept of concerns (1969).

> Fuller conducted research on the concerns of student teachers and developed a model based on her empirical finding that student teachers' concerns moved through a natural development sequence of four stages: unrelated, self, task, and impact. Unrelated concerns are personal in nature and do not address the concerns of the teaching practice. Self-concerns, although focused on teaching practice, are egocentric in nature. Task concerns are logistical in nature, that is, they are directed towards the mechanics of instructional delivery. Impact concerns, the highest level in Fuller's hierarchy, address the impact of teaching practice on students. (Young, 2005, p. 49)

The results of the data collected, using the Concerns Based Adoption Model, on the implementation of the UbD instructional framework indicate that there was no concern that

manifested itself in the form of skepticism regarding the usefulness of UbD as an instructional framework to impact learning. Those who participated in the study ranged, in level of endorsement for UbD, from effusive praise to expressing interest in learning more about UbD. No participant in the study contradicted the claim that the UbD framework created by Grant Wiggins and Jay McTighe would be the most useful in developing constructivist, understanding based instructional practices, where cognitive development of student understanding would lead to further student success as the education system endures school reform in the 21st century.

Concerns that were expressed by teachers indicated that attention, collaborative time, and school/district resources, focus' on external mandates such as standardized exams to evaluate teacher performance, such as Common Core Assessments, have impacted the efficacy of the implementation plan. Other concerns expressed highlight that some teachers do not see the connection between developing a model for understanding based instructional practices and Common Core Learning Standards. Teacher comments such as, "Let's deal with one change at a time- Common Core alignment, universal acceleration for all, then UbD," indicates that there is still a concern with the role of the UbD framework in developing skills related to Common Core and the content understandings expected in accelerated courses. The initiator's role as an initiator, manager, and responder, discussed by Malmgren (2010) within the context of the Concerns Based Adoption Model (CBAM), is ultimately responsible for responding to these concerns as opportunities to assist each participant cross the "Implementation Bridge."

Implications

The data collected in this study of the efficacy of the Understanding by Design (UbD) implementation plan using the Concerns Based Adoption Model (CBAM) can be evaluated in three areas: 1. The amount time devoted to the study prior to the results being analyzed. 2. The school, and district, culture present in the Birchfield School District at the time UbD was studied. 3. How the CBAM instrument was used in evaluating the efficacy of the UbD implementation plan. The aggressiveness of the implementation of UbD was not expressed by the faculty in Birchfield High School. However, Birchfield had just completed two years of its implementation plan, so it is worth noting Hall and Hord's (2006) point that it takes 3-5 years to implement new practices and that it is unlikely that positive increases in practices will occur over the short term. Use of data from the *Level of Use,* reported from Birchfield High School, could be more effective if the Concerns Based Adoption Model was utilized multiple times over a period of 3-5 years. This study does not evaluate any changes in the stages throughout implementation phases for the initiative (before implementation, early implementation, full implementation). Because of this, most of the feedback regarding the *Level of Use* (LoU) of the initiative represented a Level III (Mechanical) or Level IVA (Routine) level of use.

> Another implication for research and evaluation studies has to do with the timing and sampling. For example, many summative evaluation and treatment/control studies are conducted with first time implementers. Our studies consistently document that most first-time users will be at LoU III Mechanical Use. It seems likely that their output/outcomes will be lower. Outcome studies should be done with LoU IVA Routine and higher users. (Hall & Hord, 2006, p. 122)

There needs to be consideration as to how the Concerns Based Adoption Model (CBAM) was used to measure the implementation of UbD. "The Stages of Concern Questionnaire (SoCQ) is a tool that produces reliable and valid results when properly used" (George, Hall, & Steigelbauer, 2006, p. 55). This research was mindful of most of the considerations that George,

Hall, and Steigelbauer expressed, particularly to "[u]se the tool to diagnose, not to screen or judge; Do not modify the statements on the questionnaire; Confirm the interpretation of the data with the respondents; Expect Feedback" (George, Hall, & Steigelbauer, 2006, p. 55-56). However, there is a natural limitation to relying solely on the three components of the Concerns Based Adoption Model.

Conclusions

The efficacy of the UbD implementation plan is most impacted by the culture of the school districts (in this study Birchfield). Culture is related to three areas: 1. The level of support for the initiative by all stakeholders; 2. The level of guidance to the initiative enacted by the facilitators; 3. The implementation process of the initiative is carried out by teachers being willing and able to effectively utilize resources granted to them in a reflective, flexible, purposeful, and collaborative manner. The CBAM conceptual framework provides the data to determine the efficacy of the implementation process, but the cultural responsiveness of the school district leads to the success of the initiative.

> There are studies that have included two or three of the dimensions and acknowledged that there are more factors to consider. For example, Park (2012) was the first to apply CBAM constructs in a study of teachers in Bangladesh. Although mainly qualitative, he applied all three Diagnostic Dimensions to explore relationships between teacher implementation efforts and the need for professional development. Yung (2010) used *Stages of Concern, Levels of Use, and Local Interventions* in a two year case study of an experienced mathematics teacher in Hong Kong who was implementing alternative assessments. Her study describes well the difficulties experienced teachers have in trying to change practices in an "examination driven competitive system" (p. 281). These two studies bring forth another major aspect of the change process- external and internal system pressures….We must think a lot more about the social construction of culture and its relationship to leadership as well as the implementation process. (Hall & Hord, 2006, p. 299).

> For the implementation of the initiative to truly succeed, the district must emphasize that the initiative can, if not complement the external mandates, then at least co-exist with their implementation. That includes utilizing resources such as time during professional development, conference, and meeting days to address the initiative, as well as financial compensation to individuals, with the clear expectation of carrying the initiative forward. "Many change efforts fail because facilitation and assistance are not provided to all members of the organization….Frequently, these leaders are without the tools or skills to do the job of supporting and assisting the staff well" (Hall & Hord, 2006, p. 304). The Birchfield School District superintendent and Board of Education publically supported the initiative. Resources, such as time and money, were earmarked specifically for the implementation of the initiative in year one. However as the initiative moved into year two, and is embarking on year three, less and less of the resources have been allocated for the UbD initiative. Hall and Hord identify that

> the arrival of some new mandate from the school board, state, or federal government can sidetrack and undercut the synergy and momentum that have been built. Therefore, a second set of interventions should be designed to protect and encourage the continuation of the Impact concerns, with a special emphasis on facilitating the sustaining of Collaboration concerns. (Hall & Hord, 2006, p. 98-99)

The level of guidance enacted by the facilitators needs to be considered based on the individual responses to the CBAM. This includes mandating the implementation of the initiative. Hall and Hord recognize that "mandates automatically lead to significantly higher Stage 2 Personal concerns….Mandates can work, but only when greater attention is given to addressing Self (Stage 1 Informational and Stage 2 Personal) concerns. More effort must be given to providing information that is clear and consistent" (Hall & Hord, 2006, p. 102). So the mandated guidance will assist in elevating the *Stage of Concern* for the individuals tasked with crossing the "Implementation Bridge" from self to task, but mandates will have minimal effectiveness in guiding individuals into considering the impact of an initiative.

"The facilitator then needs to focus his/her attention on guiding individuals based on their specific *Level of Use*. Successful facilitators of LoU III Mechanical Use are those who are willing to do all sorts of seemingly low-level, nitty-gritty tasks to help the implementer achieve short-term success in use. They offer many how-to tips. They send out emails with organization suggestions" (Hall & Hord, 2006, p. 110) Since so many of the first time users will be categorized as a Level III Mechanical user, the facilitator needs to be prepared to incorporate all of those methods to enhance the individuals level of use. Hall and Hord recognize that

> the facilitator is typically welcomed warmly by the LoU IVB person, who is looking for new ways to make the program as successful as possible for students. Since the LoU IVB user is wondering how well the program is working, a key action of the facilitator could be to suggest or to help the teacher find assessment or evaluation tools or rubrics to use in checking student work. (Hall & Hord, 2006, p. 111)

This makes it imperative that the facilitator cultivate these individuals by identifying interventions that are discipline specific. The Birchfield High School *Local Interventions* survey results indicated that providing content experts to explore big ideas and key concepts within the context of a specific discipline is at least a "moderate-high priority" going forward (Figure 4). Birchfield High School teachers identified paired collaboration as the highest priority for facilitators to consider going forward (Figure 4), particularly to sustain the highest levels of use for each individual.

> LoU V is a significant phase for the evolution of a change process and for the professional culture of the school. Change facilitators should do all that they can to nurture and facilitate its development and continuation. The facilitator's task is to make it possible for people who wish to work together to do so. Thus, making accommodations in the schedule so that the LoU V users can have concurrent planning periods, changing office or classroom assignments, and other logistical arrangements should be done in order to support two or more users working together. (Hall & Hord, 206 p. 111)

The teachers should be guided with consistent clear goals emphasizing the initiative as a priority over a period of 3-5 years, and there should be clear expectations regarding the implementation of UbD that focus on the collaboration. Birchfield High School teachers responded to the initial questions regarding their *Stages of Concern* results by explaining that more common planning time was needed, specifically within the day to prepare lessons. This would prove to be an obvious additional financial cost to the district. However, this desire was reinforced with the results of the *Local Interventions* survey (Figure 4), where interactive workshops with an emphasis on the application of UbD principles need to be prioritized. The facilitators at Birchfield High School need to provide opportunities for interactive workshops where specific questions about particular aspects of the initiative can lead to specific guidance regarding the implementation of the initiative. To assist in ensuring that the facilitator is

providing the appropriate supports related to a teacher's concern and level of use of the initiative, a more representative sampling of the teachers need to be present when data regarding the initiative is collected annually.

Teachers can demonstrate that they are willing and able to effectively utilize resources granted to them in a reflective, flexible, purposeful, and collaborative manner by demonstrating shared values and vision, intentional collective learning and application, and shared personal practice. Responding to the level of support and guidance provided by the leadership within the organization, it is recommended that teachers demonstrate that they are part of a culture where it is understood that students are academically able, and they create visions of the learning environment that will enable each student to realize is or her potential. In this community, each individual member is responsible for his or her own actions, but the common good is upper most. The relationships of the individuals are described as caring, and they are encouraged by open communication and trust.
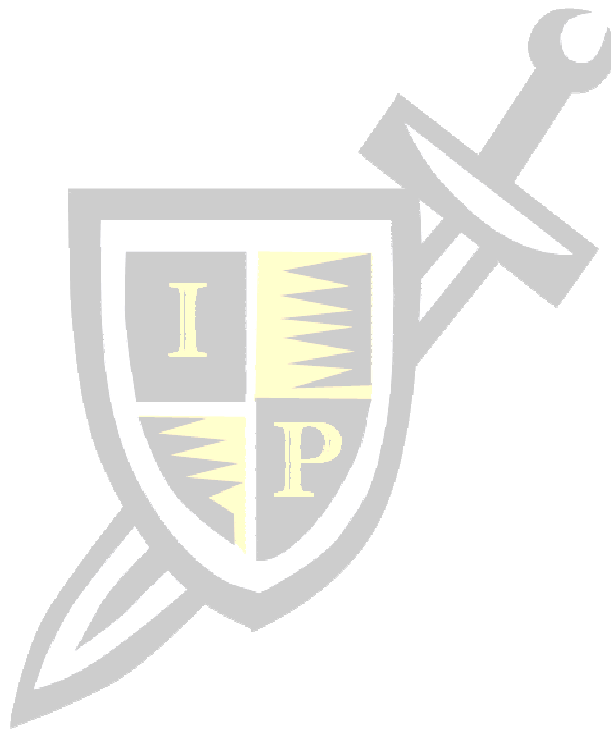
> "The conversations that staff has about students, learning, and teaching form the basis for decisions about what to learn and how to learn it, so that staff's learning addresses students' learning needs. As a result of these learning conversations and interactions, decisions are made collectively and new content and instructional strategies are used in classroom practice….Schools where the staff is sharing, learning, and acting on its learning produce increased learning outcomes for students." (Hall & Hord, 2006, p. 166)

Teachers must be willing to be part of an environment where shared personal practice is encouraged and in return they are active participants in that practice.

> [T]eachers observe, script notes, and discuss observations after the visit. Making time for these activities is difficult, but the process contributes to the individual's and the community's improvement. Mutual trust and respect are imperative. The staff must develop trust and caring relationships with each other. These relationships develop through both professional problem-solving activities and social interactions of staff. As a result, the staff finds support for each other's triumphs and troubles….In terms of the change process, when a school staff learns and works collaboratively in a PLC culture, the outcomes for the staff are significant (Hord, 2004; Hord & Tobia, 2012). Not only do teachers express more satisfaction and higher morale (school climate factors), but they also make teaching adaptations for students- and these changes are done more quickly than in traditional schools. In such a context, teachers make a commitment to making significant and lasting changes, and are more likely to undertake fundamental systemic change. (Hall & Hord, 2006, p. 167)

The intention of this study was to evaluate the efficacy of the Understanding by Design (UbD) implementation process through teacher perception and practice. The reason why UbD was selected as the initiative to be studied, using the Concerns Based Adoption Model (CBAM) conceptual framework, was due to the impact understanding based instructional design would be expected to have on student learning and subsequent assessment results. School reform in the 21st century emphasizes the initiative to create learners who are college and career ready through the development of skills and understandings. Ultimately using the Concerns Based Adoption Model to measure the efficacy of the implementation of an initiative can certainly increase the

likelihood of success as it guides the implementers, facilitators, and organization leadership. The responsible change facilitator frequently asks: 'Is what I am doing right and best for everyone?'" (Hall & Hord, 2006, p. 305) The change facilitator needs to continue to listen to the feedback that is accumulated through using CBAM and then respond accordingly. "It is neither good nor bad for individuals to have certain concerns profiles. What is good or bad is the types of interventions that are made in response to each diagnostic profile. All interventions must be concerns based. They must be related to each client's current concerns and extent of use, not the change facilitators." (Hall & Hord, 2006, p. 305) Only then, over a period of years, supporting each individual as they cross the implementation bridge, can the implementation plan be effective.

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APPENDIX

Figure 1: Birchfield High School Levels of Use Survey Results		
Question	# of "Yes" Responses	% of "Yes" Responses
Are you using Understanding by Design in your instructional planning?	23/27	85%
If you are not using UbD as part of your instruction, are you planning to acquire more information about UbD at a later date?	9/13	69%
If you are not currently using UbD as part of your instruction, are you actively planning to incorporate UbD into your lessons?	8/13	62%
If you are currently using UbD as part of your instruction, do you consistently re-evaluate the quality of use of UbD and possible modifications to it to achieve an increased impact on students? Particularly as it relates to new federal, state, and/or local instructional goals?	15/24	63%
If you are currently using UbD as part of your instruction, is your approach to master the tasks required to meet your own instructional design needs?	19/24	79%
If you are currently using UbD as part of your instruction, do you give consistent thought to improving its use or its instructional consequences?	18/24	75%
If you are currently using UbD as part of your instruction, do you consistently make instructional decisions based on knowledge of short- and long-term consequences for students?	21/23	91%
If you are currently using UbD as part of your instruction, do you consistently collaborate with colleagues to achieve a collective impact on students?	11/23	48%
If you are currently using UbD as part of your instruction, do you consistently re-evaluate the quality of use of UbD and possible modifications to it to achieve an increased impact on students?	20/23	87%

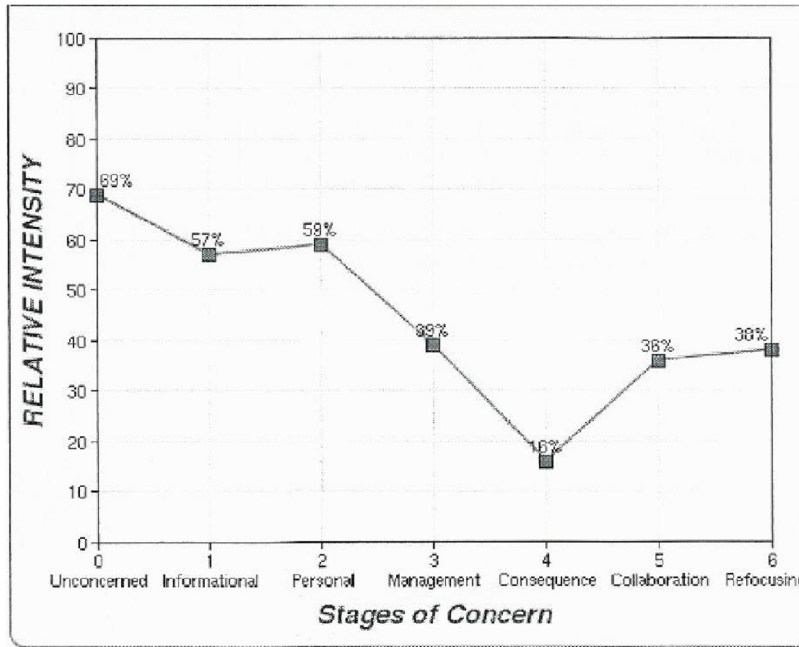*Figure 2: Birchfield High School Stages of Concern for UbD Results*

Figure 3

Percent Distribution of the Second Highest Stage of Concern in relation to the First Highest Stage of Concern for Birchfield High School

Highest Stage of Concern	Second Highest Stage of Concern %							% of Participants	Number of Participants
	0	1	2	3	4	5	6		
0-Unconcerned	0	44	28	16	0	4	8	47.20%	25
1-Informational	0	0	43	0	14	14	29	13.20%	7
2-Personal	18	73	0	9	0	0	0	20.80%	11
3-Management	100	0	0	0	0	0	0	1.90%	1
4-Consequence	0	0	0	0	0	0	0	0.00%	0
5-Collaboration	29	57	14	0	0	0	0	13.20%	7
6-Refocusing	0	50	0	0	0	50	0	3.80%	2
								Total	53

Figure 4: Results of the Local Interventions Survey

Local Intervention	Birchfield High School
Informational Workshops on UbD: Stand and Deliver	3.55
Interactive Workshops: Emphasis on the Application of UbD Principles	4.31
Peer Study Groups: Study the Principles and Application of UbD	4.09
Mentoring or Coaching Relationships: To model and/or coach the uses of UbD	3.86
Content Experts: To explore the big ideas and key concepts within the context of a specific discipline	4.29
Paired Collaboration: To work through the application of UbD principles with a peer	4.59
Total Participants from Each School	58 participants