

# **Collaborative Inquiry Groups to Improve Teacher Practice and Increase Student Engagement**

**Kara Duros**

**Reach Institute for School Leadership**

*Submitted in partial completion of the Clear Administrative Services Credential and Master of Education in Instructional Leadership*

## **Abstract**

Academic engagement is one of the key predictors for success in school. Disengaged students have a much higher likelihood of dropping out, becoming incarcerated or becoming dependent on social services in their future. Teacher behavior has a significant impact on the levels of student engagement in the classroom. Self-determination Theory (SDT) suggests that when students feel that their psychological needs of competence, emotional connection to others, and autonomy are met, students will be much more likely to be engaged in school. For adolescent students, fostering a sense of autonomy seems to be the most important psychological need. The focus of this action research was to use collaborative inquiry groups to change teacher practice to become more autonomy supportive in order to increase student engagement in the classroom. Collaborative inquiry groups have been shown to not only change teacher practice because they can meet teachers' psychological needs of competence, relatedness and autonomy, but also serve as a model of the type of autonomy supportive conditions that teachers can implement that would lead to increased engagement in the classroom. Teachers followed a collaborative inquiry model where they spent time defining the problem, conducting research and gathering data to develop an intervention plan, implementing the plan, reflecting and refining the plan, and then celebrating and sharing their achievements and learning with the larger school community. As a result of the collaborative inquiry group, teachers developed a common understanding of the causes of student engagement, they became more reflective, and their practice improved and became more autonomy supportive. In addition, all teachers reported an increase in student engagement in their classrooms as a result of the intervention strategy.

### **Context and Problem of Practice**

Oakland Unity High School is a public charter high school in Oakland, California. It opened in the fall of 2003 with approximately 100 9th and 10th graders. The school has since expanded to over 300 students in 9th -12th grades. Unity High School's mission is to prepare all students for admission to and success in college. The majority of Unity High School students are the first in their families who will attend college and many are the first in their families to graduate from high school. A little over 30% of the students are English Language Learners and 42% are Redesignated Fluent English Proficient (RFEP). Approximately 85% of the student population are Latino, 13% are African American and the remaining 2% of students are two or more races. Over 80% of the students qualify for free or reduced lunch. Approximately 9% of Unity's students receive special education services. In the 2012-2013 school year, Unity had an Academic Performance Index (API) score of 735 and a similar school ranking of 9, meaning that Unity's performance is equal to or better than 90% of all similar schools.

Unity has not chosen to put excessive limitations on teachers, trusting that they are experts in their field. The benefits of this autonomy are that teachers have been free to experiment and try new strategies to engage students, many times resulting in a discovery of practices that have been very effective in raising student achievement. For example, Unity teachers created and refined a blended learning math program that has resulted in huge gains in the math CST scores. In 2010, Unity students scored an average of 281 on the 9<sup>th</sup> grade Algebra 1 CST, with 0% of students scoring Advanced and 9% Proficient. After several years of using the blended learning program, scores rose to 399 in 2013, with 33% of students scoring Advanced and 47% scoring Proficient. These impressive gains were the direct result of teachers having the autonomy to try out new programs and discover what works best for our students.

However, downsides to this unofficial policy of teacher autonomy have emerged. For example, teachers who are new to the field or who have not received formal training have often been left to figure out what works through trial and error. This has resulted in teachers reporting feeling overwhelmed and frustrated with the demands of the job. This systemic lack of training and support has also meant that student outcomes at Unity parallel the achievement gaps seen across the country, with the English Language Learners and students with disabilities scoring disproportionately lower than other populations at the school. The Academic Performance Index (API) scores for students with disabilities was 463 and 454 in 2012 and 2013, respectively, while English Language Learners scored 677 and 698, respectively. In contrast, the school wide API scores in 2012 and 2013 were 705 and 735.

One possible cause of these gaps is a lack of student engagement at Unity as evidenced by student surveys and interviews. In a student satisfaction survey in June of 2014, 49% of students felt indifferent or disagreed with the statement, “I find what I am learning in most of my classes interesting.” In addition, 65% of students either felt indifferent or disagreed with the statement “I can connect most of what I’m learning in classes with my own life and experiences.” Twenty-six percent of the students disagreed with the statement “I enjoy school” and an additional 28% felt indifferent about the statement. It is clear that students are having difficulty feeling engaged and motivated in their classes.

Additionally, students have been reporting to teachers that they feel confused about assignments, that they feel like they want to give up and that they are not capable of doing the work. Teacher interviews in the Fall of 2014 revealed that several advisors felt that students stopped trying in certain classes because they no longer felt like they would be able to pass the class. In a student interview, one student stated, “I don’t understand the way my teacher

teaches. I feel lost and it makes me want to put my head down”. Students are feeling confused and not competent in being able to complete the work assigned to them and are therefore becoming disengaged in class.

Teacher behavior can often have a significant impact on improving student engagement. However, at Unity many teachers tend to place the blame on students. Teachers report feeling frustrated with student apathy and often say that students are not working hard enough and taking enough responsibility in their learning. In addition, not having time or support to be reflective on their own practice has caused teachers to not think critically about their role in the learning of their students. One teacher reported that she believes that most teachers at Unity want equity and success for all students, but that often teachers get caught up in the day to day and lose sight of the lower performing students. This lack of understanding about what causes engagement and the lack of time and support to be reflective on the effectiveness of their own practice has inhibited teachers from learning how to engage more students in their curriculum.

Student grades vary dramatically from one class to another, with some teachers having average grades of A's and other teachers having average grades of D's. In 2014, 43% of students enrolled in Biology for the spring semester failed the course and less than 1% failed Chemistry. In the social studies department, 22% of students enrolled in World History for the spring semester failed the course whereas 36% failed U.S. History. Such wide degrees of variance between grades and the success of students in classes is evidence of a lack of coherence in terms of grading, instruction and expectations of students. Coherence can only be established when a school develops a clear model of teaching and instruction and provides adequate support for teachers to learn and master the skills and strategies valued in the school community. Because Unity has a tradition of autonomy, teachers are not clear about what expectations should

be in terms of rigor, instruction and grading. When there is such a wide degree of variation between classes, students, especially English Language Learners and students with disabilities, have a much harder time feeling confident in their own ability to be successful. Without a certain degree of confidence, it is virtually impossible for a student to feel engaged in a class.

In the 2013-2014 school year, teachers began to become more vocal in their requests for more teacher support and instructional coherence. Teachers recognized that there was a problem in getting students engaged and wanted the school to provide more professional development time dedicated to this topic. In response to this call, myself and another instructional coach designed a professional development arch to move away from the model of autonomy without support and put into place new model of professional development that used the Critical Friends Groups (CFGs) protocol to encourage teachers to open up their classroom and learn from their colleagues. In a CFG, teachers commit to improving their practice through collaborative learning and structured protocols for interaction. In Unity's CFGs, teachers focused on planning curriculum and developing strategies to help students engage in academic conversations in all classes. We introduced the Understanding by Design (UbD) framework for unit planning and had teachers use this framework to develop unit plans and then receive feedback from their colleagues through the CFGs. The majority of teachers responded positively to this support and we continued this process while having teachers develop assessments and try academic conversation strategies. Through these sessions, teachers not only reported that their practice improved and that they felt more supported, but also that they had a more clear idea of what was happening in other classrooms at Unity. Eighty-two percent of teachers reported finding these CFG sessions impactful on their teaching and requested continuing this process. Ninety-one percent agreed that using the UbD template helped them to be more purposeful in their planning.

Additionally, when teachers were surveyed on their top professional development priorities for the following school year, the top three priorities were professional development around aligning curriculum and assessments to the Common Core, professional development around school-wide instructional practices and individual coaching to increase student engagement. These survey results demonstrated that teachers believed that while we had made improvements in our instruction at Unity, this important and meaningful work was still necessary. The CFGs were a great beginning, but teachers still felt that student engagement was an urgent and pressing priority that needed to be addressed the following year.

In response to this data from the teachers as well as the student data, we have reworked the master schedule this year to allow all teachers to have two planning periods instead of one that we have had in previous years. One of these two planning periods is a common department planning time. The rationale was that if teachers had more time to dedicate to planning and collaborating with one another, they would better be able to meet the needs of our students. Another new change that we have implemented this year is that we have created two part time Director of Instruction positions. I and one other teacher will be teaching part time and will be taking on this new role. With the addition of these new roles, we will be able to offer coaching to all teachers on staff. The new master schedule and the growth in number of students has meant that we have gone from having 10.5 teachers to a total of 18 teachers, with three part time and two 80% teachers. Of these 18 teachers, eight are new to Unity and five of those are in their first year of teaching. In addition, three teachers are in BTSA and are working towards their clear credential.

With this increase in numbers of teachers new to Unity and beginning teachers, it is even more important for us to identify the highest leverage student engagement strategies and to

support the teaching staff in mastery of these strategies. This year the administrative team has developed two school wide goals based on the feedback from teachers, students, and state tests. The two goals that were developed are focused on engaging students in learning and developing assessments in instruction. **For this action research, the problem of practice is that even though teachers are committed to the mission of Unity to prepare all students for admission and success in college, it is clear that teachers struggle with effectively engaging all students in their curriculum.** Without understanding how to engage students in rigorous curriculum, we will not be able to meet our mission of preparing all Unity students for admission and success in college. We cannot expect our students to be motivated to go to college and graduate from college unless we first have been able to engage them in rigorous curriculum that they have been adequately supported to master in high school. We will not be able to close the achievement gap that we passionately talk about fixing unless we first figure out how to get all students engaged in the curriculum.

### **Review of Relevant Literature**

In California, the average student spends about 9,000 hours in school from kindergarten to 12th grade. Schools are one of the most influential forces on the education and socialization of children, which has an enormous impact on their future as well as the future of our society. Today's society requires creativity and innovation as well as collaborative critical thinkers who are life long learners (Prensky, 2005; Tapscott, 1998). Schools have the important task of preparing students to meet these needs. Schools must educate children as well as promote a genuine passion and love for learning and accomplishment. In addition, with the Common Core movement, schools are renewing a strong emphasis on developing critical-thinking, problem-solving and analytical skills that will prepare our children to become college and career ready

and become positive contributing members in our society. A key component to helping students reach these important goals is to foster a belief in them that they are competent students. It is within schools that students can develop a strong sense of personal worth, alongside their active involvement in education that will lead to the skills highlighted in the Common Core and required by the 21st century.

### ***Defining Engagement***

In the last 30 years, engagement has become an increasingly popular topic of study by educational researchers. Often, the way researchers have defined engagement has varied greatly from study to study. However, there have been common themes that have emerged from this research on engagement of students. Typically, engagement has been described as having two to three components; behavioral, emotional or affective, and cognitive subtypes (Finn, 1989; Fredricks, Blumenfeld, & Paris, 2004; Jimerson, Campos, & Greif, 2003; Marks, 2000; Newmann, Wehelage & Lamborn, 1992; Willms, 2003). Behavioral engagement refers to the positive conduct, effort and participation students exhibit in school. Emotional engagement is demonstrated by the interest, identification, belonging and positive attitude about learning by students (Finn, 1989; Marks, 2000, Newmann, Wehelage & Lamborn, 1992; Willms, 2003).

When students are cognitively engaged, students demonstrate self-regulation and an investment in learning goals (Fredricks et al., 2004, Jimerson et al., 2003). Newmann (1992) summarized much of this research by stating that engagement is when students are actively involved in their learning, in contrast to apathy or superficial participation. For the purposes of this study, I will be defining engagement as when students are actively involved in their learning, behaviorally, emotionally, and cognitively.

### *The Importance of Engagement*

If schools are to accomplish the critical task of preparing all students to be college and career ready when they graduate, they need to ensure that students are engaged learners. Engagement is one of the key predictors of success in school. When students are passive learners or disengaged, they have a much higher likelihood of dropping out and not finishing high school. Students who do not complete high school are more likely to be incarcerated and experience long-term dependence on social services (Christenson, Sinclair, Lehr, & Hurley, 2000). To further exacerbate this problem, students with less academic knowledge and skills are more likely to be disengaged in school (Kelly, 2008; Lee & Smith, 1995).

Much like my experience at Unity, many educators report that engagement is one of the most important factors in student achievement in their own schools and that students with disabilities, low income students and academically at risk students were the least likely to be engaged in school. In an April 2014 survey about the perspectives of educators on student engagement and motivation conducted by the Education Week Research Center, of the 500 teachers and administrators who responded, 87% considered engagement as a “very important” factor in student achievement. Despite this high rating, only 40% of these educators felt that a majority of their students were highly engaged. Similar to Unity, the demographics that the educators felt were the least engaged were students with disabilities, low income students and students who are academically at risk. The sub population that was rated the lowest on the engagement scale were students who are academically at risk with only 26% of the educators reporting that they believed this population was strongly engaged (Sparks, 2014).

A focus on increasing engagement of students is the best way to break this negative cycle at its earliest stage of students' disconnection with school (Appleton, Christenson, & Furlong 2008). Engagement is an alterable variable that helps to interrupt this unproductive and dangerous cycle. This focus helps to shift the attention from variables that are not within the realm of influence of educators, such as the socio-economic status of students, their learning differences, or educational background, to variables which teachers have a great deal of influence over. Instead of focusing on how to reshape these students, the focus must shift to how to reshape schools to fit the learning needs of the disengaged students (Taylor & Parsons, 2011). When teachers are able to help students become engaged, students perceive more support from their teachers and this then leads to a cycle of increased engagement. Much like the saying, the rich get richer, the more engaged students are, the more engaged they become just by virtue of their engagement (Appleton et al., 2008).

### ***The Role of Motivation in Engagement***

Often when educators discuss the engagement levels of their students, they use the term motivation interchangeably with engagement. Although these two qualities are interrelated, it is important to distinguish the differences between the two terms. Motivation can be thought of as the answer to the question "why am I doing this?" (Maehr & Myeyer, 1997). When students are motivated it means that they have internalized the purpose or value of the activities they are being asked to do as well their own competence in the task.

However, students can be motivated, but not engaged. Russell, Finely, & Frydenberg (2005) described engagement as "energy in action, the connection between person and activity" (p.1). Motivation is an important component of engagement, but it is not sufficient for

engagement. Students may be highly motivated to complete a task or assignment without being engaged. Most teachers have experienced situations when a student is able to articulate why particular activities or concepts are important to learn, but that same student either does not complete the task, learn the concept or only superficially engages in the material. Motivation is an important step to engagement, but engagement is the critical factor that determines how authentically involved students are in their learning.

### *Self-determination Theory and Causes of Engagement*

The Self-determination Theory (Deci & Ryan, 1985; Deci et al., 1991) assumes that there are a number of educator behaviors that can affect students' feelings towards engagement in learning. Self-determination Theory (SDT) views people as having three basic psychological needs: a need to feel competent, emotionally connected to others, and autonomous. SDT research has shown that when these three psychological needs are met, students are much more likely to be engaged in school (Appleton et al., 2008; Deci et al., 1991; Park et al., 2011, Ryan & Deci, 2000).

Similarly, a 2013 analysis by the Center on Education Policy at George Washington University reported that there are four academic mindsets that contribute to a student's motivation and engagement: belief in their own competence, ownership of their own learning, interest in the subject or at least an understanding of the value of the subject, and a feeling of social relatedness to the school community (Sparks, 2014). Park et al., (2011) found that these context-based perceptions of competence, relatedness, and autonomy affected students' engagement over and above the effects of students' race/ ethnicity, gender and prior achievement level. Being able to meet students' three basic psychological needs then seems to be a very

powerful tool to overcome the challenges teachers report with engaging the demographics of students who have a higher likelihood to become disengaged in school.

The first psychological need, competence is when students understand how to attain various outcomes and are efficacious in performing the actions required to meet these outcomes (Deci et al., 1991). It is important to note that students need to feel a perception of their own competence in order for them to be more likely engaged. Camille A. Farrington, the lead researcher for the Chicago Postsecondary Transition Project at the University of Chicago Consortium on Chicago School Research found that the more students feel competent and in control of their learning,

the harder they work, they better they do and the higher grades they receive. It's a feedback loop. Students are constantly in the process of either getting confirmation of the mindsets they already hold or their mindsets are being changed for the better or the worse based on their interactions with people in the school environment (Sparks, 2014 p.13).

Closely connected to students' sense of competence is their perception of their relatedness with the people in their school. Students' sense of relatedness is fostered when they develop secure and satisfying connections with others within the school community (Deci et al., 1991). Baumeister and Leary (1995) found that "...people seem to need frequent, affectively pleasant or positive interactions with the same individuals, and they need these interactions to occur in a framework of long-term, stable caring and concern" (p. 520). These positive interactions lead to better academic performance for students (Goodenow, 1992), and higher achieving students seem to reap the most benefits from these relationships (Park et al., 2011).

Students also need to feel the perception of autonomy in school. Autonomy is when students have the opportunity to be self-initiating and self-regulating of their own actions (Deci et al., 1991). In school, this can mean that students have choices about how and what they learn. It does not mean that teachers give up their control over the content that students learn in their classes, but that students have choices within the predetermined boundaries set by their teachers. Assor et al., (2002) described the distinction as not minimizing the educator's presence with autonomy supportive strategies, "but making the educator's presence useful for the student who strives to formulate and realise personal goals and interests" (p. 273). Students will feel a perception of autonomy when they share in the decision-making about the conditions of their learning and when they perceive that their learning is relatively free from external controls (Connell and Wellborn, 1991; Deci et al., 1991). A lack of structure is not an autonomy supportive environment, instead a classroom should provide a high degree of freedom alongside a high degree of structure.

### ***Benefits of Autonomy Supportive Strategies***

Autonomy seems to be the most influential factor in helping students become engaged, especially for adolescent students. Adolescence is a time when fostering a sense of autonomy is critical while they are working on developing their new sense of identity as they try on a variety of adult roles (Nota et al., 2011). A teacher's autonomy supportive behavior not only nurtures a student's need for autonomy, but also that student's need for competence and relatedness (Ryan & Deci, 2000). By focusing on supporting autonomy in the high school classroom, teachers are able to hone in on the highest leverage strategy for engaging adolescent students.

Research has shown that the benefits of creating an autonomy supportive environment are plentiful. When teachers are able to provide autonomy supportive conditions, students show high levels of engagement and motivation (Grolnick & Ryan, 1987; Jang & Reeve, 2005; Park et al., 2011), cognitive flexibility, self-esteem and perceived competence (Deci, Schwartz, et al., 1981) and are more likely to value the task and experience positive feelings towards it (Grolnick, Ryan & Deci, 1991). Deci et al., (1991) found that

when significant adults- most notably, teachers and parents- are involved with students in an autonomy-supportive way, the students will be more likely to retain their natural curiosity (their intrinsic motivation for learning) and to develop autonomous forms of self-regulation through the process of internalization and integration (p. 342).

Therefore, autonomy supportive strategies must be the primary focus of teachers who are attempting to reverse the negative cycle when learners become disengaged in the classroom.

### ***Autonomy-Supportive Instructional Strategies***

Autonomy supportive instructional strategies allow students to make choices regarding what and how they learn (Barfield & Brown, 2007; Cotterall & Crabbe, 1999). In addition, Sinclair (2000) added that learners need to take responsibility for their learning by making decisions about their learning goals and the format of the activities and types of assessments. In an environment of high stakes standardized testing, autonomy supportive teacher behaviors need to be thought of on a continuum, with complete choice on one end and no choice on the other. The reality of autonomy supportive classrooms in today's society is somewhere in the middle, with the goal of providing as much choice as would be considered reasonable with the federal, state, and district expectations and requirements (Chalupa & Haseborg, 2014). To best provide

this type of environment for students, there are five behaviors that teachers can adopt to maximize student engagement in the classroom. Teachers should: 1) minimize the use of controlling language, 2) provide choice, 3) encourage active participation, 4) acknowledge students' feelings, and 5) foster relevance.

### ***Use Non-controlling, Informational Language***

Often teacher's use directive and controlling language with students. Phrases such as "get started"; "no do it this way"; "hurry up"; "you should"; "you must"; and "stop" communicates to students that compliance, not engagement is the desired goal of the teacher. Teachers should instead rely on non controlling, informational language (Assor et al., 2002; Deci et al., 1991; Kusrkar, Croiset & Ten Cate, 2011; Mageau & Vallerand, 2003; Reeve, 2006; Reeve, 2009). Teachers can modify their language to become less controlling by using phrases such as "could, may, can" to shift the messages to become more flexible and non-evaluative. Teacher feedback should be directed towards the learning issues, not the student. Teachers must give positive and constructive feedback so that students understand the gap between their current understanding and the desired understanding (Kusrkar, Croiset & Ten Cate, 2011, Reeve, 2009). The language teachers use should be information rich and help students to better diagnose the cause of their poor performance so that they can better understand the actions they need to take to address the problem (Reeve, 2006).

### ***Providing Choice***

When teachers provide choice they are enabling students to choose tasks that they perceive as consistent with their own personal goals and interests (Deci et al., 199; Kusrkar,

Croiset & Ten Cate, 201; Reeve, 2006). Students can make choices about the topic, type of activities, forms of assessment, and modes of learning that they would like to engage in. In a study of the use of autonomy supportive instruction in foreign language classes at the college level, researchers found that when students were allowed to make decisions around the content, format, presentation, and assessment in their course, they were more motivated, engaged and had more positive learning experiences. Students participated in four week long work cycles with a choice of topic to study, choice of several types of written and oral presentation assessments, reflections in their learning journals and at the end of the semester, students created a portfolio with samples of their work and a reflection paper on their projects. After finishing the course, one student said,

Being able to make my own decisions only increased my commitment to learn. To use another analogy, it was something like owning a business. If one owns a business, one is much more likely to put in more work with more enthusiasm. If I owned a business, I would not grumble at putting in fourteen-hour days, because it would be mine, and therefore, I would be devoted in a less begrudgingly way. The freedom to make my own decisions and to be creative made me invest in learning on a different level than I had previously experienced, and what I did learn about German culture, history, and language skills will not soon be forgotten (Chalupa & Haseborg, 2014 p. 74).

In addition, in Australia, where autonomy supportive strategies have been widely adopted by schools, researchers have found that the most common autonomy supportive strategy is the use of learning plans or contracts. In a learning plan, the student, in conjunction with the teacher, creates a plan that identifies particular individualized learning goals and maps out a plan for how the student will meet these goals (Schuster, 2012). Both of the strategies used in the foreign

language classes and in Australian schools allows students to exercise their power of choice within the confines of the requirements for the particular subjects that students are engaged in and demonstrates that autonomy supportive environments that foster student choice are indeed possible and able to be very successful.

### ***Encouraging Active Participation***

Another aspect of autonomy supportive behaviors is encouraging active participation in the learning activities (Kagan, 2014; Kusrkar, Croiset & Ten Cate, 2011). Active participation can be encouraged through discussion, group work, and hands-on activities. Teachers can arrange the learning materials and seating arrangements in such a way that students can manipulate objects and engage in conversations rather than passively watch the teacher (Deci et al., 1982; Flink et al., 1990; Reeve et al., 1999). Spencer Kagan (2014) has done extensive research on how to encourage students to actively process the information they are learning. In these Kagan Strategies, he has developed four principles of processing symbolized by the acronym PIES (Positive interdependence, Individual accountability, Equal participation, and Simultaneous interaction):

**Positive interdependence:** There must be a relationship in the processing where the success of one student helps the others in the group and a contribution of each group member is necessary for success of the group.

**Individual accountability:** The performance of every student must be required and viewed by at least one other student.

**Equal participation:** Structures must be created in order to ensure that all students participate equally.

**Simultaneous interaction:** Structures must be in place so that multiple students can participate at once.

Kagan's research has shown that these strategies can dramatically increase the understanding and retention of content by students. Neuroscience also backs up Kagan's claims. Active and frequent processing helps to activate many parts of the brain and therefore allows the brain to store new content in more places and move this content from short term to long term memory (Kagan, 2014). When teachers encourage active participation of students through these methods, students are spending more time engaging with the material and their likelihood of understanding and retaining the information is increased.

### *Acknowledging Student's Feelings*

Acknowledging student's feelings is an important strategy to use when working to increase the engagement of students. Acknowledging students' perspectives and feeling and allowing criticism helps to challenge the teacher to make tasks more interesting or relevant to students own personal goals, interests, and inner motivation. Allowing students to share their opinions is an important way for teachers to learn more about the needs and interests of the students. Teachers can choose to either change course based on student feedback or if this is not appropriate, they can then use this information to connect the learning task to students own goals and interests to help the students understand the relevance of the activity.

This behavior is the second most influential behavior for increasing engagement, after fostering relevance (Deci et al., 1991). Teachers must take the time to acknowledge students expression of negative affect and then empathize with the students so that the students can feel heard and valued (Kusurkar, Croiset & Ten Cate, 2011; Reeve, 2009). When teachers do this it also allows teachers to learn more about what students might be struggling with so that they can

address this problem. This is not about being permissive to disrespectful behavior or relinquishing one's responsibilities as the teacher and authority, it is about acknowledging and validating student perspective and allowing student voice to have power in the classroom (Reeve, 2009). When teachers do this, students feel heard, respected and are more likely to become critical thinkers and engaged in the class.

### ***Fostering Relevance***

Fostering relevance has been found to be the most influential autonomy supportive behavior that teachers can do to encourage engagement (Assor et al., 2002; Skinner & Belmont, 1993). Fostering relevance is a direct attempt by teachers to help students to experience the learning processes as relevant to their self-determined goals and values. In order to do this, teachers need to understand students interests, values and goals and then be able to link the school tasks to these interests, values, and goals (Kusurkar, Croiset & Ten Cate, 2011). If students are able to understand the relevance of a particular task or topic to their own goals or values, then they will feel more autonomous while they are working.

Often there are activities or topics that teachers are required to complete with students that students find uninteresting. In these situations it is even more important for teachers to directly communicate the value in such activities or topics so that students can link these activities to their own intrinsic motivation. It is important that when teachers are communicating the relevance of activities that they are not linking the relevance to extrinsic factors such as grades, positive social image or financial success and instead link it to intrinsic motivating factors such as self-development. When teachers are able to link the learning and activities in class to their students own goals as often as possible, students are able to understand why they

must engage in a task and are much more likely to then become engaged (Assor et al., 2002; Jang, 2008; Reeve, Jang, Hardre, & Omura, 2002; Reeve, 2009; Taylor & Parsons, 2011).

### ***Changing Teacher Practice***

If teachers are to master these high leverage strategies, they will need support from our school. In the Education Week Research Center survey on engagement, only 14% of respondents agreed that their preservice training provided adequate preparation to help them understand how to engage students (Sparks, 2014). Sixty percent of the teaching staff at Unity did not go through a preservice training program prior to beginning their teaching career, which means it is all the more important to develop effective professional development to support our teachers in engaging the students at Unity. Research has shown that the continuing development and learning of teachers is vital to improving the quality of schools (Borko, 2004; Bryk et al., 2010; Desimone, 2009; Little, 2006). Teachers' motivating styles with students tends to be stable over time (Deci et al., 1981), but because teachers behavior is malleable with effective PD, new and veteran teachers can learn to expand their style to include more autonomy supportive instructional behaviors. (Assor et al., 2002; Reeve, 2006; Reeve, Jang et al. 2004).

### ***Professional Learning Communities (PLCs)***

Extensive research has been conducted to contribute to our understanding of the effective elements of professional development. From this research, we know that professional development works best when it's on-site, job embedded, sustained over time, centered on active learning, and focused on student outcomes (Chappuis, 2007; Little, 2006). One of the ways that teachers can engage in this type of work is through Professional Learning Communities (PLCs).

Richard Dufour (2004), an expert in PLCs states that, “To create a professional learning community focus on learning rather than on teaching, work collaboratively, and hold yourself accountable for results” (p. 6). These three core principles are what drive professional development to become more effective and result in lasting change. When teachers engage in PLCs, they are faced with situations that challenge their way to thinking, talking, and teaching and require their own practice to evolve and grow. PLCs can be a powerful tool for schools to create positive change through their own internal capacity (Crowther, Kaagan, Ferguson, & Hann, 2002).

Dufour (2004) argues that we need to focus on the first core principle, students’ learning, instead of on teaching. When we identify what we want students to learn, how we will know when they learn it and how we will respond when a student experiences difficulty in learning, we are more able to ensure that students are actually learning. Schools need to develop a coordinated strategy that is based on intervention rather than remediation when faced with the situation that students are not engaging in the curriculum and learning the necessary content and skills (Dufour, 2004).

In order to develop this coordinated strategy, teachers need to be organized into teams. Dufour and Marzano (2009) content that “there is abundant evidence that organizing people into teams in which they work together to achieve common goals for which members are mutually accountable is a powerful structure for promoting individual and collective accountability” (p. 67). To integrate change into a teachers practice, they need to not only engage with new information, but do this in a collective manner (Chappuis, Chappuis & Stiggins, 2009). By creating a culture of collaboration, teams can work to engage in a cycle of questions that can promote deep learning. Little’s (2006) research has shown that teacher learning communities

contribute to teacher growth as well as favorable student outcomes. When teachers work together they are making their own practice public and creating a sense of share responsibility for student learning, which is more likely to yield higher levels of learning (Desimone et al., 2002; Little, 2006).

The last core principle of PLCs, focusing on results, means that student data is critical to the learning process of teachers. If the focus is on students and what they are doing and learning in a class, then student data has to be examined in the teams. When teachers are faced with data about student learning, that is an inescapable and a motivating factor to improve practice. Elmore (2006) found that,

changing teaching practice, even for committed teachers takes a long time, and several cycles of trial and error; teachers have to feel that there is some compelling reason for them to practice differently, with the best direct evidence being that students learn better, and teachers need feedback from sources they trust about whether or not students are actually learning what they are taught (p. 38).

This collaborative team structure is a powerful tool to engage deeply with the evidence of progress towards a collective goal.

### ***Collaborative Inquiry Groups***

One example of a PLC is when schools create opportunities for teachers to participate in a collaborative inquiry process. Collaborative inquiry is a process when teams of educators commit to exploring and answering compelling questions about their professional practice through a model of action research (Adams & Townsend, 2014). When this inquiry process pushes teachers to use the large body of educational research to guide and inform their practice,

teacher practice and student learning is enhanced. In the collaborative inquiry process, teachers go through a similar cyclical process of action research, where they first collectively identify the problem, use outside research to inform the intervention, design an intervention, implement the intervention and continually reflect and refine the intervention before they assess the achievements of the inquiry group (Adams & Townsend, 2014; The Literacy and Numeracy Secretariat, 2010). The inquiry approach helps teachers to not only develop their own inquiry skills, but also allows them take ownership of the process and deepen their knowledge base of effective teaching strategies (Jacobson, 2010). Bingham et al. (2006) further corroborate this assertion by stating that when teachers engage in research, they naturally “begin to acquire the characteristics of PLCs: self-reflection, shared and lifelong learning, decision making based on data, heightened expertise, and pride in helping to create a body of craft knowledge” (p. 682). In addition, educators in Alberta, Canada have been using collaborative inquiry groups as a model of professional development and have found that it has resulted in enhanced instructional practices, increased confidence, improved collaborative skills, and heightened empowerment (Adams & Townshend, 2014). Through collaborative inquiry, teachers develop their own sense of efficacy and professionalism, which is closely associated with student achievement.

From the experiences of the Alberta educators, Adams & Townsend (2014) outline the characteristics that enhance the collaborative inquiry process. They found that collaborative inquiry groups need to be sustained over time, rather than episodic. To be able to achieve lasting change that improves student performance, teachers need to be able to focus on one inquiry question over a long period of time. This focus also needs to be something that teachers take a shared responsibility for. The motivation that drives teachers to do this work should not be external accountability, but rather a share responsibility for student learning. In addition,

collaborative inquiry needs to be site specific. For the inquiry to be relevant to the work that teachers do, it needs to be focused on a site specific problem. The focus of the collaborative inquiry needs to be differentiated rather than mass-produced PD. The educators involved in collaborative inquiry groups need to be able to concentrate their learning on aspects of their practice that are unique to their contexts. Another characteristic is that collaborative inquiry is inquiry-based. There is no prescribed curriculum that teachers are mandated to adopt. The collaborative inquiry process is an organic one in which the curiosity and learnings of teachers shapes the direction and action of the group. Lastly, collaborative inquiry is collaborative by nature. All participants engage in share learning. When teachers are part of a collaborative inquiry process that has these characteristics, they are more able to effectively confront educational challenges faced by their school (Adams & Townsend, 2014).

### ***Conclusion***

Increasing student engagement is the most powerful strategy teachers can use to ensure the success of their students. When students are disengaged they are more likely to drop out of school or not make the same gains as their engaged peers. Teachers have the ability to alter and increase the level of student engagement by meeting students' three basic psychological needs to feel competent, related and autonomous. For adolescent students, helping students to feel autonomous is the highest leverage strategy teachers can use to increase engagement because of their developmental stage. To encourage students to feel autonomous in class, teachers can employ five strategies in their classes. To foster a sense of relevance, teachers should 1) minimize the use of controlling language, 2) provide choice, 3) encourage active participation, 4) acknowledge students' feelings, and 5) foster relevance. Of the five autonomy supportive strategies, fostering relevance seems to be the most impactful on the level of engagement of

students. Fostering relevance is a powerful tool because it helps students connect what they are doing in class to their own personal intrinsic goals. When students see the link between what they are doing and their own self-growth and development, they are much more likely to engage in the curriculum in meaningful ways.

In order for teachers who are not currently using these autonomy supportive strategies to learn and integrate them into their own practice, they need to participate in effective professional development. The literature has shown that teacher behavior is malleable by effective professional development. One model of professional development that has been shown to be successful in changing teacher practice is to engage teachers in Professional Learning Communities. PLCs are a process when teachers collaboratively work together to focus on student learning and use data to hold themselves accountable for results. One specific example of a PLC is a collaborative inquiry group. When teams of teachers participate in a collaborative inquiry group, they commit to exploring and answering compelling questions about their professional practice through a model of action research. When teachers use the large body of educational research to inform their practice, student learning is enhanced as well as teacher confidence and ability to self-reflect. Collaborative inquiry groups are designed in such a way that the three basic psychological needs of teachers, the need to feel competent, related and autonomous, are met and further the engagement of teachers in these types of settings. Because collaborative inquiry groups are teacher driven and not meant to impose a set curriculum, teacher's sense of autonomy as well as competence is fostered. In addition, the collaborative nature of the group encourages a sense of relatedness or connection with other educators. If teachers focus on how to increase student engagement in the classroom in a collaborative inquiry group, teachers will be much more likely to make lasting change in their own classroom.

**Theory of Action**

Problem of Practice	Literature Review	Intervention	Literature Review	Expected Outcome	Research Methods/ Data Collection
What is the context? What is the problem in that context?	What do you know about the problem? What has been tried in the past to address the problem? What was successful and why?	What are you going to try? Why do you think it will impact the problem? What is your rationale?	What do we know about quality interventions of this kind?	What do you think will change/improve?	How will you know if it changed/improved? What data will you collect?
<p>Unity has a history of giving teachers autonomy without much support.</p> <p>As a result, teachers are not consistently engaging all populations of students at our school.</p> <p>Teacher's tend to blame students for their lack of engagement.</p>	<p>All people need to feel a perception of competence, relatedness, and autonomy to be engaged.</p> <p>Adolescent students tend to respond most favorably to feeling a sense of autonomy.</p> <p>To learn these strategies teachers need to engage in effective PD that also gives them a sense of autonomy, competence and relatedness.</p>	<p>Volunteers will participate in a 10 week collaborative inquiry group to focus on the issue of engagement.</p> <p>Group will collectively identify problem, research solutions, implement solutions and evaluate effectiveness</p>	<p>From my research, these sustained, differentiated, site specific and collaborative inquiry groups result in the most lasting and positive changes.</p>	<p>Teachers' perceptions of causes of engagement will be now based in research.</p> <p>Teachers will consistently use an autonomy supportive strategy to engage students in their discipline.</p> <p>Teachers will become more reflective on their own practice as a result of the inquiry.</p>	<p>Survey data (pre and post intervention)</p> <p>Meeting notes</p> <p>Teacher reflective journals</p> <p>Observation video and notes (pre/ post intervention as well as formative observations)</p> <p>Researcher reflective journal</p>

**Intervention and Data Collection Plan**

In response to the critical disconnect between the stated goals of Unity teachers and school community and the engagement levels of the students, I have developed an intervention

plan to help teachers become more autonomy supportive in the classroom. The intervention I have designed is based upon the research I have conducted on the highest leverage teacher strategies to increase engagement as well as the use of collaborative inquiry groups and to change teacher practice. By focusing on engagement in the classroom in an intensive inquiry group setting, I hope to support teachers in learning about what the research says about engagement, integrating this knowledge into their teaching practice, and collectively reflecting on the results of their actions, and finally refining their own practice based on these results.

### ***Intervention Design***

The literature strongly supports the use of autonomy supportive strategies in the classroom as a strategy to help engage students behaviorally, emotionally, and cognitively. Many teachers at Unity are not able to identify what teacher behaviors are able to increase the engagement of their students and instead often blame the students themselves. In addition, these autonomy supportive strategies are not strategies that many teachers at Unity are using on a regular basis. In order for teachers to learn about the causes of engagement, strategies that can increase engagement and integrate these strategies in a lasting and effective way into their practice, they need to engage in effective professional development. Through my research I have discovered that one of the best ways to engage teachers in effective learning is through the use of collaborative inquiry groups. Because Unity has a history of autonomy and independence, this will be a new experience for many teachers. The positive experiences from using the Critical Friends Groups during the last academic year are a sign that despite this history of independence, Unity teachers will welcome the opportunity to collaborate on an issue that many teachers believe is a critical one facing our school.

To begin the process, I plan to present this research and intervention plan to the staff. During this presentation, I will share with staff my learnings about the causes of engagement as well as the autonomy supportive behaviors that can increase engagement. I will also share my intervention plan with teachers. Following this presentation, I will ask for volunteers to join the collaborative inquiry group.

Once the members of the inquiry group are established, I will have teachers complete a pre-intervention survey. The purpose of this survey will be to establish a baseline of what their beliefs are about the causes of engagement and teachers' impact on engagement. In addition, I will conduct a baseline classroom observation of all participating teachers in which I note the autonomy supportive or suppressive behaviors. This will help me to determine where teachers currently are in terms of using autonomy supportive strategies to engage their students. I will also conduct an observation debrief to learn more about the teachers' perceptions about the strategies they used to engage students and the effectiveness of their own behaviors.

My research demonstrated the importance of creating collaborative inquiry groups that are sustained over time, site specific, differentiated, inquiry-based, collaborative, and encourage a shared responsibility. To ensure that the collaborative inquiry group that I will be facilitating exhibits these critical characteristics, I will meet with the group on a weekly basis for ten weeks. During these meetings we will use the model of action research to guide our collaborative inquiry cycle. In the first session, I will have teachers take a pre-intervention survey where they share their perceptions about the definition of student engagement, the causes of student engagement, the level of student engagement at our school and in their classes, as well as their understandings and perceptions of autonomy supportive teacher strategies. We will then focus on building community and creating a shared understanding of student engagement.

The following three meetings will be spent defining the problem of student engagement at Unity, sharing research and devising an action plan. I will share the research I have found about the causes of engagement and the highest leverage strategies to increase engagement and I will ask teachers to engage in the research process as well. From our collective learnings, we will devise an action plan that outlines a specific autonomy supportive strategy that we will all commit to using in our classrooms. The literature suggests that all learners need to feel a sense of autonomy. As a result, I will not be prescribing an autonomy supportive strategy in our inquiry group, but instead, teachers will be using the research, data they collect from their classrooms, and their own personal experience to collectively choose one strategy they will all try. In this way, our process will truly be a site specific inquiry that is collaborative, differentiated and will foster a sense of shared responsibility in the staff.

For the following four sessions, we will implement the agreed upon strategy, reflect on the effectiveness and refine our action plan accordingly. Because the focus of my action research is changing teacher practice, I will be gathering data about how teachers' are utilizing the autonomy supportive strategy we decided on as a group. However, the focus of the inquiry group will be on changing teacher practice in order to increase student engagement. As a result, in the inquiry group, we will be gathering and analyzing data of teacher practice as well as student engagement. Teachers will be examining videos of their own and each other's classrooms to analyze the effectiveness of the teacher in adopting the autonomy supportive strategy as well the levels of student engagement as a result of these teacher behaviors. At the end of all inquiry meetings, I will provide time for teachers to write in a reflective journal in Google docs to record their thoughts and take-aways from each of the meetings.

The final two collaborative inquiry meetings will focus on assessing the achievements of the group, celebrating these achievements and learnings and sharing these learnings with the larger teaching staff. As Adams & Townsend (2014) found, it is important to take time at the end of the process to evaluate what has been learned and share these important lessons with the larger community in order to further instructional coherence and encourage replication on a larger scale.

At the end of the intervention cycle, I will conduct post-intervention observations and ask teachers to take a post intervention survey. The purpose of this will be to collect data on how teachers' practices and thinking have changed as a result of the intervention.

***Overview of Intervention***

<b>Component</b>	<b>Activities</b>	<b>Purpose/ Question to be answered</b>	<b>Data to be collected</b>	<b>Type of Data (Process v. Impact)</b>
Identify focus group of teachers	<ul style="list-style-type: none"> <li>- Presentation to whole staff about action research topic</li> <li>- Allow for a staff discussion and questions and ask for volunteers to participate</li> </ul>	<ul style="list-style-type: none"> <li>- Share with staff the work I have been doing</li> <li>- Find out who the target group of teachers will be</li> </ul>	<ul style="list-style-type: none"> <li>- Meeting notes</li> <li>- List of teachers who volunteered</li> <li>- Researcher reflective journal</li> </ul>	Process (teachers who volunteer will be the ones who will engage in this work)
Pre-intervention survey	<ul style="list-style-type: none"> <li>- Computerized survey</li> <li>- Likert scale questions about perceptions and understandings of engagement and teachers' impact on engagement</li> </ul>	<ul style="list-style-type: none"> <li>- What are teachers' perceptions about the definition of student engagement?</li> <li>- What are teachers' perceptions of student engagement at our school?</li> <li>- What are teachers' perceptions of the causes of student engagement?</li> <li>- What are teachers' understandings and perceptions of autonomy supportive teacher strategies?</li> </ul>	<ul style="list-style-type: none"> <li>- Response to Likert scaled questions</li> <li>- Open ended responses to reflective questions</li> <li>- Researcher reflective journal</li> </ul>	<ul style="list-style-type: none"> <li>- Process (survey responses informs intervention)</li> <li>- Impact (survey responses establishes a baseline for intervention)</li> </ul>

Component	Activities	Purpose/ Question to be answered	Data to be collected	Type of Data (Process v. Impact)
Baseline observation	<ul style="list-style-type: none"> <li>- Scripted observation of teachers classrooms looking for autonomy supportive or suppressive behaviors and indicators of students engagement</li> <li>- Post observation debrief of instruction</li> </ul>	<ul style="list-style-type: none"> <li>- To determine where teachers are before the intervention in terms of using autonomy supportive strategies and engaging their students</li> <li>- To determine what teachers own perceptions are around the strategies that they used to engage students and the effectiveness of their own behaviors</li> </ul>	<ul style="list-style-type: none"> <li>- Scripting of observation</li> <li>- Teacher responses</li> <li>- Researcher reflective journal</li> </ul>	<ul style="list-style-type: none"> <li>- Process (observations informs intervention)</li> <li>- Impact (observation data establishes a baseline for the intervention)</li> </ul>
Inquiry group meetings with regular reflection on process	<ul style="list-style-type: none"> <li>- Inquiry protocols to identify problem, research and explore solutions, implement solutions, and evaluate their effectiveness using video observations</li> <li>- Reflective surveys at the end of each meeting</li> </ul>	<ul style="list-style-type: none"> <li>- What does engagement look like?</li> <li>- What are the causes of engagement?</li> <li>- What strategies can we use to increase the engagement at our school?</li> <li>- How can we support one another in moving our practice forward?</li> <li>- How can we align our practice as a inquiry team?</li> </ul>	<ul style="list-style-type: none"> <li>- Agendas</li> <li>- Meeting notes</li> <li>- Observation videos</li> <li>- Researcher reflective journal</li> <li>- Teachers' reflective journals</li> </ul>	<ul style="list-style-type: none"> <li>- Process (discussions lead the team to the next steps in the research)</li> <li>- Impact (the inquiry group will hopefully move the group to a new level of skill in engaging our students)</li> </ul>
Post-intervention classroom observations	<ul style="list-style-type: none"> <li>- Observations of participating teachers' classrooms</li> </ul>	<ul style="list-style-type: none"> <li>- How have teachers' practices changed as a result of this work?</li> <li>- How have students' engagement changed as a result of this work?</li> </ul>	<ul style="list-style-type: none"> <li>- Observation notes</li> <li>- Researcher reflective journal</li> </ul>	<ul style="list-style-type: none"> <li>- Impact (teachers' practice is the target of this intervention and this will be used to compare to the baseline observation at the beginning of the process)</li> </ul>
Post-intervention meeting and survey	<ul style="list-style-type: none"> <li>- Final inquiry meeting to debrief the learnings and process</li> <li>- Computerized survey</li> <li>- Likert scale questions about perceptions and understandings of engagement and teachers' impact on engagement</li> </ul>	<ul style="list-style-type: none"> <li>- To see how teachers' perceptions about the causes of engagement and their agency around encouraging engagement have changed over the course of the intervention.</li> <li>- To see how teachers' report that their own practice has changed as a result of the intervention</li> <li>- To see how teachers' perception of student engagement has changed over the course of this intervention.</li> </ul>	<ul style="list-style-type: none"> <li>- Meeting notes</li> <li>- Survey data</li> <li>- Researcher reflective journal</li> </ul>	<ul style="list-style-type: none"> <li>Impact</li> </ul>

*Data Collection Plan*

Expected Change	Data Source	What will this data tell me?
<p>Teachers' understanding of the causes of engagement will be rooted in research.</p>	<ul style="list-style-type: none"> <li>• Pre and post intervention survey</li> <li>• Teacher reflective journals</li> <li>• Collaborative inquiry meeting notes</li> <li>• Coaching notes</li> <li>• Researcher reflective journal</li> </ul>	<p>Process: From meeting to meeting, this will show how teacher's perceptions of engagement are evolving over time</p> <p>Impact: Pre and post surveys will show changes of teachers' understandings resulting from intervention</p>
<p>Teachers will consistently use an autonomy supportive strategy to engage students in their discipline.</p>	<ul style="list-style-type: none"> <li>• Pre and post observation video and notes</li> <li>• Formative video observations</li> <li>• Coaching notes</li> <li>• Teacher reflective journal</li> <li>• Collaborative inquiry meeting notes</li> <li>• Pre and post intervention survey</li> <li>• Researcher reflective journal</li> </ul>	<p>Process: Observations, reflective journals, and meeting and coaching notes will reflect how teachers' practice changing over time</p> <p>Impact: Pre and post observations and survey will show how teacher practice has changed as a result of the intervention</p>
<p>Teachers will become more reflective on their own practice as a result of the inquiry.</p>	<ul style="list-style-type: none"> <li>• Teacher reflective journal</li> <li>• Collaborative inquiry meeting notes</li> <li>• Coaching notes</li> <li>• Researcher reflective journal</li> <li>• Pre and post intervention survey</li> </ul>	<p>Process: Journal entries and meeting and coaching notes will show how teachers' reflection on how their own behaviors impact student engagement are evolving over time</p> <p>Impact: Pre and post surveys will demonstrate the changes in teachers' ability to reflect on their own practice as a result of the intervention</p>

### **Research Methods**

After presenting to the entire staff about my proposed action research, I had several teachers express interest in joining the collaborative inquiry group. The collaborative inquiry group consisted of six teachers, one teacher-administrator, one administrator and myself.

Participant A is a first year teacher who completed a teacher education program and has a Master of Education. Participant B is a teacher with six years of teaching experience who has been teaching at Unity for the last four years and earned his credential through a district intern program. Participant C is a former Teacher for America teacher who has been teaching for the last three years at Unity and earned her teaching credential in an intern program. Participant D is a third year teacher who just joined Unity this year and earned her teaching credential through a teacher education program. Participant E is a fourth year teacher who began her teaching career as an after school tutor at Unity and received her teaching credential through an intern program. Participant F is a first year teacher who is currently in an intern teacher credential program. Participant G is an eighth year teacher who earned her credential through a teacher education program, has a Master of Education and is currently in the process of clearing her administrative credential. She is also a part-time administrator at Unity. Participant H is former teacher at Unity who is now an administrator at the school. He is currently in the process of earning an administrative credential and Master of Education and expressed an interest in participating because he wanted to learn more about strategies that can be leveraged to engage students and also because he was intrigued by the inquiry process as a possible strategy to help improve teacher practice at Unity. He did not implement the autonomy supportive intervention strategy because he is not currently a classroom teacher.

I recorded and transcribed 13 collaborative inquiry group meetings and asked all participants to complete a reflective journal after each meeting. I also completed a reflective journal after each of our sessions. I scored a baseline video observation of all teachers at the start of the intervention and another observation at the end of the intervention for how effectively they were implementing the agreed upon structures of the autonomy supportive strategy the inquiry group decided to implement. In addition, I collected qualitative and quantitative data from the pre-intervention survey at the start of the first inquiry group meeting and a post-intervention survey at the last inquiry group meeting.

I started first by coding the qualitative data from the participants' reflective journals, my reflective journals and inquiry meeting notes to be able to monitor the participants' progress and be able to adjust the meeting agendas accordingly. I created a set of codes based on my expected results around teachers exploring the causes of engagement, reflecting on their own practice, planning their intervention strategy, and reflecting on the success of the strategy. In addition, I also created codes for teachers reflecting on the inquiry group and process as a whole. When analyzing the data, I looked for the frequency of codes to note trends in participants' thinking and practice. I organized the data by the three areas of expected change as well as the additional learnings about the inquiry process and levels of student engagement.

I then looked at the pre and post-intervention qualitative data from the surveys and observation videos. I tallied the frequency of teacher behaviors in the observation videos and responses of quantitative data from the surveys to compare the changes in teacher thinking, self-reported teacher behavior, actual teacher behavior and teacher perceptions of student engagement before and after the intervention. I also coded all of the qualitative survey responses with the same codes used for the meeting notes and reflective journals.

### Analysis and Findings

The problem of practice that I was examining is that even though teachers are committed to the mission of Unity to prepare all students for admission and success in college, it is clear that teachers struggle with effectively engaging all students in their curriculum. I had three areas of focus that I expected would change as a result of this action research: 1. Teachers' understanding of the causes of engagement would be rooted in research, 2. Teachers would consistently implement an agreed upon autonomy supportive strategy to engage students in their classroom, 3. Teachers would become more reflective of their practice as a result of the collaborative inquiry process. In addition to learning about these three areas, I also developed a clearer understanding about the importance of collaboration in the collaborative inquiry process and the levels of student engagement as a result of autonomy supportive strategy that the participants selected to implement. I have organized my findings into these five areas below.

***Expected change: Teachers' understanding of the causes of engagement will be rooted in research.***

During the meetings and in the participant reflective journals teachers spent a great deal of time working to come up with a common definition of engagement that reflected the research on engagement and the experiences and goals that teachers had in their own classrooms. I had intended for this process to take one inquiry group session, but because teachers were coming from varying perspectives on what constitutes engagement, the process was extended to four inquiry group meetings. The root of the debate was around the cognitive aspect of the definition of engagement. Teachers grappled with the idea that if a student does not reach mastery of the content, then was this student truly engaged. One teacher, Participant B, felt very strongly that if a student does not reach mastery of the content or skill, then we cannot say that they were engaged. Most of the other participants did not feel that mastery is a defining feature of

engagement. These teachers were concerned that all students have different learning abilities and are coming in with different skills sets. They argued that students might not reach full mastery because of their learning difference or prior education, but that if they are engaged in a task, they will demonstrate growth in their learning. This debate caused some heated discussions and several teachers reported feeling frustrated by the discussions in their reflective journals. Eventually, the teachers agreed to define the cognitive aspect of engagement as actively participating in the tasks and persevering until there is demonstrated growth towards mastery.

This disagreement in how to define engagement also showed up in the survey data. In the pre-intervention survey, participants defined engagement in a variety of ways that included emotional, behavioral and cognitive aspects. Most definitions were unique with the only unifying component was that 6 out of 7 teachers said that engagement involves participating in a task. However, in the post-intervention survey, participants were more unified in their definitions. All participants defined engagement by using cognitive aspects of the definition whereas before the inquiry group 71% defined using this component. One teacher described engagement as, “Students focusing in on a task and committing to figuring it out, even if it means they have to try multiple times, and even if it takes them a while.” Another said that, “Engagement is when a student is actively participating and taking ownership of his/ her own learning”. Most teachers said that engagement is when students are actively engaged in a task and are willing to persevere in the face of challenge.

Participants also shifted their beliefs around the causes of engagement in the classroom. Prior to the intervention, participants varied in their responses to the question, “From your experience in the classroom, what do you believe are the factors that most significantly cause student engagement?” Teachers ranged in their responses from saying that the student’s ability to

complete the task causes engagement to the relationship they have with the teacher or peers to how interesting or relevant the student finds the task. Fifty-seven percent of the participants said that engagement was caused by an alterable variable such as relationship with the teacher or the structure of the task itself and the remaining participants felt that engagement is caused by either a combination of alterable and non-alterable variables. The types of non-alterable variables that participants believed cause engagement ranged from student's ability level to their own intrinsic goals and whether they were aligned with the goals of the course or the school. After the intervention, 83% of the participants described the causes of engagement as being an alterable variable that teachers have control over. Most teachers stated the biggest factor that causes engagement is the structure of the task that teachers design. Many teachers now agree with the research that shows that when teachers create an autonomy supportive structure in their class, students are more engaged (Grolnick & Ryan, 1987; Jang & Reeve, 2005; Park et al., 2011). Many teachers described that when teachers design a relevant, appropriately rigorous and group worthy task, that student engagement will increase. One teacher stated,

A factor that significantly increases engagement is group work. Specifically, group work that is genuinely group worthy— where every member of the team feels and is valued and needed to complete the task. I think that students are the most engaged when the task feels personal to them or if it is high stakes.

Another described, “Making things high stakes with high expectations and then offering appropriate levels of support. Being intentional about WHAT students will be doing and WHY they will be doing those things”.

In addition to developing a common understanding of engagement, teachers developed a common understanding of autonomy. In the pre-intervention 29% of participants attributed

autonomy to being an activity that is learner-centered, but by the end of the intervention, 83% participants defined autonomy supportive strategies as being learner-centered. Participants were also more likely to say that autonomy supportive strategies should be highly structured and monitored by the teacher after the inquiry group than before. Fifty percent of the teachers said that autonomy supportive strategies should be highly structured and monitored by the teacher post-intervention, whereas only 14% said this was the case pre-intervention.

Interestingly, participants were slightly less likely to agree that encouraging autonomy in the classroom can increase student engagement. Teachers' average rating in response to the statement, "Encouraging autonomy in the classroom can increase student engagement" decreased from 3.57 in the pre-intervention survey to 3.42 in the post-intervention survey with 4 representing strongly agree and 1 representing strongly disagree. This slight decrease might be due to the fact that prior to the intervention, teachers had not intentionally planned and implemented autonomy supportive strategies and therefore were not aware of the potential challenges and obstacles they would face in planning and implementing the strategy. Teachers reported in debrief conversations during the inquiry group meetings that they did not realize how difficult crafting a strategy that met all of the requirements of active participation would be. Many believed that although the engagement in their classroom increased, it would have increased even more if they had been able to successfully meet all of the requirements of the strategy. Teachers' responses to this question might be a reflection of their more in-depth and realistic understanding of what it takes to plan and execute an autonomy supportive strategy rather than their belief that it is less likely to increase engagement.

***Expected change: Teachers will consistently use an autonomy supportive strategy to engage students in their discipline.***

Participants made the decision that they wanted to use the active participation strategy from the five options of the autonomy supportive strategies. Teachers decided that this strategy would be the most effective in increasing the engagement of the population of students at our school site and that it would be the most realistic to implement in the time frame that had been allotted. In order to implement the strategy, participants first needed to develop a common understanding of what active participation consists of. For two meetings, teachers spent the majority of the time defining what they meant by active participation. They decided to use the PIES components that Kagan (2014) describes in his research and added in that the task must be collaborative and group worthy. Their agreed upon definition states that,

Students are actively participating in their learning when they are collaborating with their peers. Students should not be passively watching the teacher. The task that students are asked to engage in must be a group worthy task, meaning that there is a clear benefit for students to be collaborating rather than completing the task independently and it must have structures in place that allow for positive interdependence, individual accountability, equitable participation of all students, and multiple students participating at once.

Once they had agreed upon the definition, they spent time in the meetings planning how they would implement the strategy and receiving feedback from their peers. Every participant implemented a 1.0 and a 2.0 version of their strategy. The 1.0 version was planned in the meetings and teachers participated in a modified Critical Friends Group (CFG) protocol to receive feedback from their peers. After they had implemented the 1.0 version of their strategy,

they brought back data they had collected from their classroom formally and informally and participated in another round of CFG to refine and revise their strategy in order to create their 2.0 version of the strategy. Consistent with the research of Chappuis, Chappuis & Stiggins (2009), teachers reported feeling that engaging with the new strategies in a collaborative manner helped them to integrate these strategies into their practice. At the end of each of these meetings, the majority of the feedback that teachers gave was that the time planning with their peers was extremely useful in helping them not only understand the strategy, but in also thinking of new ways to design their strategy that would best meet the needs of the students. During the meetings and in their reflective journals, all participants except for one, Participant B, referenced how they were integrating the feedback from their peers anywhere from three to five times. Participant D stated in her reflective journal that

I also really appreciated being able to work with [Participant E] on my engagement strategy. There were potential problems that she helped me reflect on early (such as, how students would evaluate each other) that will hopefully smooth the roll-out of this strategy.

Participant C similarly reflected that

Today I discussed my strategy of having students share feedback via google docs. My co-workers came up with some great ideas to mitigate a common problem I've been having which is low-skilled students leaving adequate feedback for their peers. They gave the suggestion of generating and sharing "student work" that I leave comments on and sharing them so students can have a model of what appropriate comments look like. I can also use that technique to give students sentence starters.

All participants except for one, Participant B, reported that they used feedback from their peers to refine and improve their strategy. Participant B was reluctant to choose any of the autonomy supportive strategies. In one of the inquiry group meetings, when asked what strategy he felt would be the highest leverage, he stated,

Participant B: Telling the students how they feel. I like that one the most, although my application might be different than others. That is the one that I use all of the time. I think it has amazing leverage. It isn't so much acknowledging their feelings as it is giving them honest feedback. They know sort of how they think they feel, but it is going in a lot deeper and exploring a lot of different issues. As in, you all say you want to go to college. You're working on a problem, you feel a little bit anxious, and then you're going to stop. Let's go back to the point about where you want to go to college. How bad do you want to go to college? Do you understand that you care, but not enough to spend 20 seconds on that problem... It's almost like holding up a mirror and they say I didn't realize I was feeling that way.

Other participants began to share ideas of what strategy they thought would be the highest leverage strategy to try out. Later in the discussion, Participant B raised his concerns again.

Participant B: Are we all going to be doing the same strategy? Is that the idea?

KD: Yes, we need to all be doing the same thing.

Participant B: Well then I gotta keep talking about this. I really think that what I am describing is quite different than any one of these [strategies] and gets to the heart of what I see to be the problem... It is a different perspective from what I am seeing here and it is some variation of acknowledging students feelings, but is getting a little deeper- not rough, but honest. It is not really fostering relevance, in some ways it is telling them that this is not

relevant to your life. I want to foster relevance for a life you don't know yet and so I am doing things that are different than this.

After he shared these perspectives, Participant G started to push him to see if he was willing to try something that he was not currently already doing.

Participant G: Are you willing to try something new?

Participant B: Maybe not... I guess you could say this. I am doing a lot of things in my class right now and I am going to keep doing what I am doing. Right now my calculus kids are studying videos and they're picking ones out and really getting down to watching them, but that is a relatively minor aspect of what I am doing. I am certainly not fostering choice.

Participant A: Can I ask a question? You keep talking about that line of disengagement and you want to get them back engaged. Isn't that one of our terms of engagement, that they persevere?

Participant B: But perseverance isn't one of these strategies.

Participant A: But there is a strategy that you are using to get them back.

Participant B: But it is not giving them choice. I am actually taking away their choice. You can't quit- that is not a choice. And I am not letting them choose the easy problems and I am telling them to work on the hard problems.

Participant G: Just to dig a little deeper, are you willing to try something that you are not already doing?

Participant B: I always try stuff I am not already doing and sometimes I reject it. I have actually spent time looking at a variety of these over the years and decided they really weren't a good approach to get a good really high level achievement that I want to get. So I don't know. I would be interested in seeing what you come up with, but I do have that concern.

Participant G: I just wanted to cut to the chase a little bit more in terms of these things are in the scope of what we have been talking about, which I know you haven't totally been in agreement all of the time. Are you comfortable with us saying we are going to try this thing and you trying it too or not?

Participant B: It will depend on the or not. It will depend on what it is.

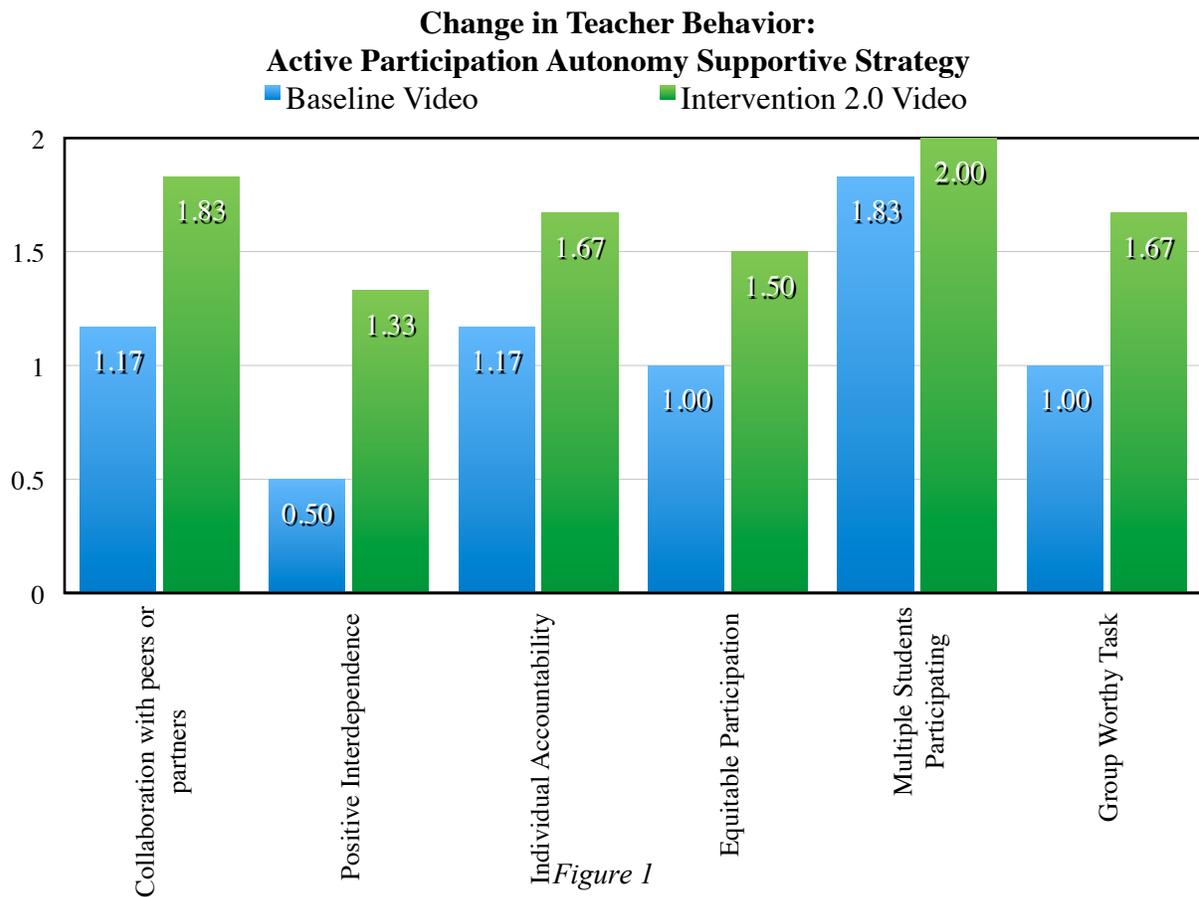
After continuing the discussion a while longer and other participants shared their perspectives, it became clear that the participants had narrowed their choices down to fostering relevance and active participation. Despite having a unanimous anonymous vote for active participation, Participant B became increasingly uncomfortable with the active participation strategy that we had selected. In later meetings, as the inquiry group began to define the active participation strategy, he brought up that he was uncomfortable with trying a strategy that involved group work or having students work in partners and was resistant to peer feedback on the strategy that he shared with his group. During the share out after a CFG group he stated that in his group, “We talked about pair share and other things like that. Things that I am physically allergic to. I just don't like to do that stuff in the classroom.” This was the last inquiry group meeting that he attended. When I followed up with him later, he said that he was not comfortable with the approach we had taken, that he appreciated the experience and that the comments other participants had made helped to shape his thinking, but he was going to stop participating in the group because he felt he might be making the experience negative for others. I will address the learnings I had from this issue in a later section titled “Fostering Collaboration in Collaborative Inquiry Groups”.

Because Participant B did not implement the strategy or stay for the entire arch of the inquiry group, I was not able to collect data on his practice from observations, surveys or

reflective journals. The following data on teacher practice only includes the remaining participants. The remaining participants all reported that they agreed or strongly agreed that their practice improved after this process. In the post-intervention survey, the average response to the statement, “My teaching practice improved as a result of the work that I did in this inquiry group” was a 3.14, with 4 representing strongly agree and 1 representing strongly disagree. When describing how their practice improved, one participant stated that, “I have become much more experimental and creative in the classroom, all towards helping students be more autonomous and engaged.” Research shows that when teachers engage in research and collaborative inquiry, they begin to acquire the characteristics of PLC’s by recognizing the value of self-reflection and decision making based on data (Bingham, Parker, Finney, Riley & Rakes 2006). One participant exemplified this when they stated, “I feel that through this process I really learned the value of choosing an area of focus and then implementing different strategies and then evaluating how successful those strategies are.” All participants described that they tried something new in their classroom.

When looking at the observation data, it is clear that all teachers improved their ability to plan and implement a strategy that would meet the criteria for active participation. When teacher’s baseline videos, which were taken when the inquiry group meetings began, were evaluated for the autonomy supportive strategy of active participation, the average score that all participants received for all components of the strategy was 1.11, with 0 representing never present, 1 representing sometimes present, and 2 representing always present. The lowest score that the group received was in positive interdependence, where the success of the group depends on the success of the individuals in the group. The average score for this category was .50. In the last video of the 2.0 intervention strategy, the average score for all participants on all of the

components was 1.67, which is an increase of .56 (Figure 1).



In addition, the area where participants scored the lowest in the baseline video is also where they grew the most. In the 2.0 intervention video, the average score for positive interdependence was 1.33, a growth of .83. The two teachers who grew the most in their practice were Participant C and D, both of whom are in their third year of teaching. Participant D's average score increased by 1.0 and Participant C's score increased by .83. Possibly this can be attributed to the fact that both teachers are in their third year of teaching. Because they have already been through their first two years of teaching, they have worked out the basic logistics of running a classroom and might be at a point where they are able to really benefit from focusing and reflecting on one area of their teaching practice. The two teachers who had the least amount of growth were Participant G and Participant F. Participant F, who is a first year teacher and is

in a intern credential program, grew by .17 and Participant G did not grow at all. This might also be attributed to where these teachers are in their teaching career as well. Because Participant F is learning the basics of what it means to be a classroom teacher and is working out systems and routines that work for him, he may not be ready yet to integrate new strategies into his classroom yet. Participant G is a veteran teacher who is transitioning out of the classroom to become a full-time administrator. She spent more time reflecting on the inquiry process as a tool to change teacher practice and giving other teachers feedback and suggestions to improve their strategies, but did not spend as much time reflecting on her own practice. Her transition to become a full-time administrator might have lessened her drive and diverted her attention from focusing on her own teaching practice and instead she spent more time being metacognitive about the effectiveness of the inquiry process as a strategy for professional development. As a result of approaching the inquiry group from her lens as an administrator and not one of a teacher, she did not see as much change in her practice.

However, it is clear that as a result of this inquiry group, the majority of teachers did improve their practice and that the changes in their practice are likely to continue even after the inquiry group has wrapped up its work. In the post-intervention survey, teachers had an average response of 3.57, with 4 representing strongly agree and 1 representing strongly disagree, when asked if they were likely to use the active participation strategy in their classroom again.

***Expected change: Teachers will become more reflective on their own practice as a result of the inquiry.***

The last expected change that I had as a result of the collaborative inquiry group was that teachers would become more reflective on their own practice. In the post-intervention survey

teachers responded with an average of 3.14, with 4 representing strongly agree and 1 representing strongly disagree, in response to the statement “As a result of this inquiry group, I have spent time reflecting on my own teaching practice in new ways.” In a follow-up question that asked teachers to explain how they have reflected, teachers discussed how they reflected on the specific intervention plan they had implemented and the learnings they had around the success of the strategy and what types of refinements they might make when they implement the strategy in the future. One participant stated,

The journals after the weekly sessions were extremely helpful in merging the conversations we were having in the group discussions with my own practice and strategy. I also thought about how I want to do at least 1 group worthy task that provides structured autonomy and includes active participation for every unit. I think these group worthy tasks will have lasting effects in both the students learning and investment in the classroom. They may even look forward to them!

Another participant described,

I have realized how helpful the active engagement strategies can be, when done right, but I don't use them nearly often enough. That is something I want to improve upon in my teaching practice. I also have pushed the boundaries of autonomy in the math classroom (at least at this school) and have developed new ideas and methods for helping students be more successful at understanding their own learning needs and advocating for them.

One other participant reflected on the active participation strategy she implemented,

Throughout this semester, I have really learned the value of peer feedback. On the one hand, and this is the way I started thinking about this topic initially, peer-to-peer

feedback makes it much easier for me to do my job because it allows students to receive feedback without me needing to grade and comment on 100 essays. However, I found through this inquiry process that the even bigger benefit is that by allowing students more autonomy, and by giving them responsibility over one another's work, they will be much more engaged. Engagement, as I said, is caring enough to persevere even when the work is challenging. What I found through providing students with rigorous, relevant work and by asking them to workshop their writing autonomously, was that writing improved and that is my ultimate goal.

The inquiry meetings and reflective journals are further evidence of these types of reflections occurring on a regular basis throughout the collaborative inquiry process. The reflections that teachers engaged in revolved around exploring refinements to their intervention strategy, reflecting on the success of the strategy, reflecting on the challenges they faced in implementing the strategy and reflecting on their own impact on engagement rather than variables out of their control. The majority of these reflections focused on exploring refinements to the intervention strategy and the success of the strategy. During one of the collaborative inquiry group meeting, Participant A reflected on both the success of her strategy and also on how she would refine it in the future,

My takeaway [of my 2.0 intervention strategy] was unique in that it was basically an assessment of my 1.0. It was the same type of task, but a different scenario. Almost no one was disengaged motor, all completed the task. It was limited in time and everyone completed it. The only thing that I wanted to change is to make sure the task is group worthy. If I were to do this again, and this is from feedback from Participant G and Kara, that I would have them work together to actually write the procedure before

doing the task. That way they have to talk to each other before they even begin because I embedded questions within the procedure and I am not sure if that was effective. Some partners of course did talk, whether or not all did is unclear. The partners worked together to share data because they had to, but there wasn't that collaboration of why are we doing this together and what is this modeling to help them in the individual part which is the report that they would give to their chief.

In her participant reflective journal, Participant E reflected on her previous two versions of her intervention before she implemented it a third version,

Tomorrow will be chaos in the auditorium. I think it will be interesting to see how the students do in a new location with the group activity. I think it will be better in terms of space, but I am not sure how the atmosphere and sound levels will be. I'm hoping, since each group and each individual has a deliverable, that the accountability will be there to make sure students are doing what they need to be doing. I also told them yesterday that this was happening, and that the groups would be pre-determined purposely so that they could help each other with the skill. I'm hoping that will smooth over any angst as far as groups are concerned. I say this, because the 1.0 activity went great, but my 1.5 activity was a bust, because they flat out refused to get up and move and work with others. Maybe it was the moving around 2 days in a week that was the biggest problem (I hope!) so tomorrow won't be an issue. They aren't moving, but they may choose to stand... Yay for possibly disastrous experiments!

All participants spent a significant amount of time in their reflective journals and during the meetings reflecting on their practice and all participants agreed that this reflection is what helped them to improve their own practice. When the whole staff was surveyed at the end of the year

about suggestions for how to improve the professional development at Unity, 100% of the participants in the inquiry group requested that we continue the collaborative inquiry group process in the next school year because they felt that it gave them the structure, support and accountability to reflect, refine and improve their practice in ways that they did not do on their own.

### ***Fostering Collaboration in Collaborative Inquiry Groups***

Although it became clear that collaborative inquiry groups have the potential to change teacher practice and thinking and increase the quality and frequency of reflection, it also became apparent that managing the personal dynamics in collaborative inquiry groups are critical to fostering collaboration. This collaborative inquiry group was unique in that teachers volunteered to be part of the group and were willing to give up their own time to take part in this process. This meant that all participants were open and excited to learn from their colleagues. Despite this, Participant B decided that he was going to stop attending the meetings because he was uncomfortable with the direction the other participants were moving in and was not willing to try the strategy that the group agreed on. Leading up to his decision, Participant B and the other participants spent much of our inquiry group meetings challenging and digging deeper on each other's ideas. These exchanges were respectful and did not seem to impact the working relationships between the participants, but they did cause frustrations both on the part of the other participants and on the part of Participant B. Many participants reflected in their journals that they felt frustrated by how slow the process was moving in the beginning because of how much time was spent engaging in debates that they felt were not moving anywhere. Participant D noted in her reflective journal that, "I am rather disappointed with today's meeting. I felt like

we spend a lot of it discussing tangents that we had already discussed or that weren't progressing us toward our goal." Participant E also noted in her reflective journal that,

I am still frustrated that some people feel we should be evaluating all students against the same measuring stick. I keep imagining in my head that cartoon where a group of animals are told they all need to pass a test, and the test is climbing a tree. Of course the monkey and the snake can do it no problem, but it is a lot harder for the elephant. Our students don't come to us all the same, and I really believe in more individualized learning, which means individualized measuring sticks. I don't know if I can agree to anything else.

In my reflective journal, I spent significant amounts of time reflecting on my own facilitation skills and how I could encourage a more positive collaborative culture. I wanted to encourage a dialogue that lead to common understandings that would lead to consensus that all participants would feel comfortable with. I also wanted to create a culture that minimized the frustration of the participants and build a trusting space that might encourage or allow Participant B to feel safe enough to try new strategies. I planned community building activities to build a common sense of purpose and foster trust as well as agendas for the meetings that structured the decision making and discussion process, but it was still a challenge for me to facilitate successful collaboration between the group members. It is clear that there is an art of fostering collaboration and facilitating collaborative inquiry groups and that more time should be given to studying this process.

### ***Changes in Student Behavior***

An additional finding that resulted from this process is that all teachers and students reported that student engagement increased as a result of the strategies that teachers implemented in their classrooms. This held true especially for the focus students the teachers selected for their classes, who were selected for their historic lack of engagement in their classes. The focus students were students that often were the lowest skilled students in the class, special education students or were ELLs. When students were surveyed by their teachers, all teachers saw the average engagement scores increase in their classes after the implementation of their 2.0 intervention strategy. Consistent with the research that shows that meeting the need for students to feel autonomous in the classroom can affect student engagement over students' prior achievement and other unalterable variables, teachers found that the focus students they selected, rated themselves as more engaged and often preformed at higher levels after the intervention strategy was implemented (Park et al., 2011).

Teachers also agreed with this assessment of their own students' engagement. In their post-intervention survey, teachers' average rating in response to the statement "Students in my classes are highly engaged" moved from 2.14 prior to the intervention to 2.86 after their implementation of the 2.0 strategy, with 4 representing strongly agree and 1 representing strongly disagree. All but one teacher answered agree to this question after the intervention and prior to the intervention, all but one teacher answered disagree. Some teachers noted that the engagement levels also seemed to continue when they transitioned on to other units and assignments in their classrooms, while other teachers noted that the engagement levels dropped after the strategy was finished. It is evident that the collaborative inquiry process focused on

autonomy supportive strategies not only improved teacher practice, but also lead to higher rates of student engagement.

### **Implications and Conclusions**

The results of this action research suggest that collaborative inquiry groups can be an effective tool to change teacher practice and help teachers to become more reflective on one area of their practice. Through this collaborative inquiry group participants developed a deeper and more thorough understanding of engagement and autonomy. In addition, through the rich discussions that were had in the inquiry meetings, teachers became more aligned in their definitions of the causes of engagement and how to define engagement and autonomy. This brought a level of coherence in the inquiry group that had not been achieved at our site before. Because we are a site that has emphasized the autonomy of teachers we have often lacked a coherent understanding of the elements of effective teaching and through the process of this group, teachers developed a much more aligned and coherent vision of what strategies encourage student engagement.

Teachers also saw improvements in their practice. Teachers had the opportunity to receive feedback from their peers through Critical Friends Groups and all integrated the feedback that they received from their peers into their practice. As a result, all teachers became more autonomy supportive. They became more skilled as designing structures that encouraged active participation and grew the most in creating systems that required the positive interdependence of all group members. Teachers reflected that when students' felt important and that their group role had value, they were more likely to engage in the task. This new knowledge and understanding helped teachers to become more motivated and purposeful in developing tasks that gave importance and meaning for all group participants. It should be noted that where teachers

are in their teaching career might influence the amount of growth that they will experience through participating in an inquiry group. Third year teachers tended to grow the most, whereas beginning teachers and veteran teachers tended to grow the least.

Teachers also became more reflective on their own practice. Teachers were given time at the end of each meeting to reflect on their learnings and all teachers took advantage of this time and reported that they found this to be helpful to improving their practice. Teachers spent the most amount of time reflecting in their journals and with their peers in the meetings about the success of the strategies and ways that they could refine the strategy as a result of the data they were collecting. It was interesting to note that during the reflections, most teachers referenced data that they had collected either formally and informally and often discussed how they continued to see more opportunities to collect additional data to get an even more clear picture of what might be going on in their classroom. Through these reflections, teachers seem to appreciate more deeply the power of data driven instruction and how data can be used as a tool to improve teacher practice and therefore student growth.

In addition, similar to Little (2006) and Desimone's et al., (2002) research, teachers discovered that when they work together in a collaborative learning community, students have more favorable outcomes. Because teachers were working together, making their practice public and developing a shared responsibility for student learning and focusing on developing autonomy supportive strategies in the classroom, students became more engaged and had higher levels of learning. These results held true even with students that had in the past been some of the most disengaged students in teachers' classrooms.

An implication for middle and high schools that are exploring strategies to engage the chronically disengaged students, should be to consider implementing an autonomy supportive

strategy like active participation. Our findings show that even with strategies that incorporate some of the elements of active participation, engagement levels of all students, including students who are low skilled, special education students, and ELLs. The more that the strategy implemented met the criteria of being a group worthy task, having positive interdependence, individual accountability, equitable participation of all students and multiple students participating at one, the more likely students were to be engaged. However, even when teachers were not able to ensure that all criteria were implemented, student engagement still increased. It is evident that when adolescent students feel more in control of their own learning and have the autonomy to be self-initiating and self-regulating, they become more engaged and invested in their learning and perform at higher levels. Because the teachers in this action research often reported how difficult it was to develop a strategy that met the criteria of being active participation, it is clear that these types of strategies are not something that most teachers can create without support or guidance.

In order to support teachers in the development and implementation of an autonomy supportive strategy like active participation, school leaders should consider the power of collaborative inquiry groups when designing the professional development at their site. Inquiry groups are a relatively inexpensive way to leverage teacher leadership and also foster a culture of learning at a school site. To effectively implement collaborative inquiry groups, school leaders will need to insure that adequate time is allocated to these inquiry groups not only for the length of the meetings, but also for the duration of the inquiry group. We dedicated thirteen weeks to the inquiry group, but many teachers still reported feeling rushed. Teachers also requested that meetings last longer than the hour that we had scheduled because they felt that as soon as we were able to start making progress on a topic, the meeting was coming to a close. Unity will be

implementing this structure next school year on a school wide basis and will allow inquiry groups to work on their selected topic for the entire school year. We will build in time in our professional development schedule for inquiry groups to meet twice a month for 90 to 120 minute blocks of time.

Another element of the inquiry group that seemed to be important for teachers was that they felt a sense of autonomy in not only choosing the topic that they were studying, but also in that they got to choose the intervention plan. All group members volunteered to be in the group because they felt passionate about the topic. While, this may not be feasible when it is implemented on a school-wide model, consideration should be made as to how to meet the psychological need of teachers to feel autonomous. Teachers need to feel that the inquiry is truly authentic, that all participants are learning together and not that there is a prescriptive solution that they are being mandated to implement mindlessly. Unity will be having four teacher-led collaborative inquiry groups next year. All teachers were invited to lead a collaborative inquiry group around a topic of their choosing based on what they believe is the most pressing student need at Unity and four teachers decided to step into this leadership role. These teacher facilitators will be presenting the topic they have selected to the staff and staff may choose which inquiry group they would like to participate in. This does not allow for the same degree of choice that was present for the action research, but it will allow teacher facilitators to feel passionate about the area they are leading the group to study, which will hopefully help keep the momentum of the group strong and will allow teachers a certain degree of choice in that they can choose which inquiry group they would like to be apart of.

One last and very important implication in planning for collaborative inquiry groups is that significant training and support should be given to the facilitators in order to foster this

collaborative culture. Despite having an all-volunteer participant group for this action research, there was still some difficult group dynamics that I was not able to overcome to prevent one of the participants from leaving the group. It will be very important for school leaders to be purposeful about who is chosen to facilitate the inquiry groups and how they will offer support for the facilitators. Unity will be providing monthly training and support meetings for all inquiry group facilitators to not only help them plan out the scope and sequence of their inquiry group, but also to develop and refine their facilitation skills. They will be learning facilitation strategies and will be getting feedback and support from their colleagues.

One limitation of this study is that the participants in the collaborative inquiry group were all volunteers. The results that were obtained from this action research may not be replicated in a situation where teachers are required to participate in a collaborative inquiry group, which may not be realistic at most school sites. When Participant B expressed resistance to participating in the intervention strategy and eventually decided to opt out of the group, there were no negative repercussions for the structure or integrity of the inquiry group because it was voluntary. If the inquiry group was required for all staff to participate in, this would have posed a very difficult problem because Participant B would not have had the option of leaving the group. The success and positive results of the inquiry group might have been compromised if we had continued without addressing this challenge. My next steps are to conduct further research on how to overcome difficult dynamics in collaborative inquiry group settings and how to foster a culture of learning where all team members feel valued and safe enough to be vulnerable and grow their practice.

Despite the challenges and limitations faced, it is evident that creating a PLC with a collaborative inquiry group is an effective way to not only change teacher practice, but to also

increase student learning and growth. Implementing a collaborative inquiry group takes careful planning, but can pay off with positively impacting the culture of learning and growth with the staff and students. It can be a relatively inexpensive model of professional development that builds on the knowledge and expertise that teachers bring their profession and has the potential to have dramatic results on student performance if implemented with fidelity.

## References

- Adams, P., & Townsend, D. (2014). From Action Research to Collaborative Inquiry. *Education Canada*, 54(5), 12-15.
- Appleton, J. J., Christenson, S. L., & Furlong, M. J. (2008). Student Engagement with School: Critical Conceptual and Methodological Issues of the Construct. *Psychology In The Schools*, 45(5), 369-386. doi:10.1002/pits.20303
- Assor, A., Kaplan, H., & Roth, G. (2002). Choice is good but relevance is excellent: Autonomy affecting teacher behaviors that predict students' engagement in learning. *British Journal of Educational Psychology*, 72, 261–278.
- Barfield, A. & Brown, S.H. (2007). *Reconstructing Autonomy in Language Education: Inquiry and Innovation*. Basingstoke: Palgrave Macmillan.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), 497-529. doi:10.1037/0033-2909.117.3.497
- Bingham, C.S., Parker, S., Finney, P., Riley, J., & Rakes, J. (2006). The teachers as researchers academy: Building community, expertise, and a knowledge base for teaching. *Phi Delta Kappan*, 87(9), 681-688
- Boroko, H. (2004). Professional development and teacher learning: Mapping the terrain. *Educational Researcher*, 33(8), 3-15.
- Bruce, J., & Showers, B. (2002). *Student Achievement: Through Staff Development*. Alexandria, Virginia USA: ASCD.
- Bryk, A. S., Sebring, P. B., Allensworth, E., Luppescu, S., & Easton, J. Q. (2010). *Organizing schools for improvement: Lessons from Chicago*. Chicago, IL: University of Chicago Press.
- Bush, R.N. (1984). *Effective staff development*. In *Making our schools more effective: Proceedings of three state conferences*. San Francisco: Far West Laboratory.
- Chalupa, C., & ter Haseborg, H. (2014). Improving Student Motivation through Autonomous Learning Choices. *NECTFL Review*, (74), 53-85.
- Chappuis, J. (2007). *Learning team facilitator handbook*. Portland, OR: Educational Testing Service.
- Chappuis, S., Chappuis, J., & Stiggins, R. (2009). Supporting Teacher Learning Teams. *Educational Leadership*, 66(5), 56-60.

- Christenson, S.L., Sinclair, M.F., Lehr, C.A., & Hurley, C.M. (2000). Promoting successful school completion. In D. Minke & G. Bear (Eds.), *Preventing school problems—promoting school success: Strategies and programs that work* (pp. 377–420). Bethesda, MD: National Association of School Psychologists.
- Connell, J. P., & Wellborn, J. G. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-system processes. In M. R. Gunnar & L. A. Sroufe (Eds.), *The Minnesota symposia on child psychology, Vol. 23. Self processes and development* (pp. 43-77). Hillsdale, NJ, England: Lawrence Erlbaum Associates.
- Cotterall, S., & Crabbe, D. (1999). *Learner autonomy in language learning: Defining the field and effecting change*. Frankfurt am Main: P. Lang.
- Crowther, F., Kaagan, S. S., Ferguson, M., & Hann, L. (2002). *Developing teacher leaders: How teacher leadership enhances school success*. Thousand Oaks, CA: Corwin Press.
- DuFour, R. (2004). What Is a “Professional Learning Community”? *Educational Leadership*, 61(8), 6-11.
- DuFour, R., & Marzano, R. J. (2009). High-leverage for principal leadership. *Educational Leadership*, 66(5), 62–68.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum
- Deci, E. L., Schwartz, A., Sheinman, L., & Ryan, R. M. (1981). An instrument to assess adult’s orientations toward control versus autonomy in children: Reflections on intrinsic motivation and perceived competence. *Journal of Educational Psychology*, 73, 642–650
- Deci, E. L., Vallerand, R. J., & Pelletier, L. G. (1991). Motivation and education: the self-determination perspective. *Educational Psychologist*, 26325-346. doi:10.1207/s15326985ep2603&4\_6
- Desimone, Laura M., Andrew C. Porter, Michael Garet, Kwang S. Yoon, and Beatrice Birman. “Does Professional Development Change Teachers’ Instruction? Results From a Three-Year Study.” *Educational Evaluation and Policy Analysis* 24, no. 2 (2002): 81-112.
- Desimone, L. M. (2009). Improving impact studies of teachers’ professional development: Toward better conceptualizations and measures. *Educational Researcher*, 38, 181-200. doi:10.3102/0013189X08331140
- Elmore, R. (2006). *School reform from the inside out: Policy, practice, and performance*. Cambridge, MA: Harvard Educational Press.
- Finn, J. D. (1989). Withdrawing From School. *Review of Educational Research*, 59(2), 117-142. doi:10.3102/00346543059002117

- Flink, C., Boggiano, A. K., & Barrett, M. (1990). Controlling teaching strategies: Undermining children's self-determination and performance. *Journal of Personality and Social Psychology*, 59(5), 916-924. doi:10.1037//0022-3514.59.5.916
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School Engagement: Potential of the Concept, State of the Evidence. *Review of Educational Research*, 74(1), 59-109. doi: 10.3102/00346543074001059
- Goodenow, C. (1992). Strengthening the links between educational psychology and the study of social contexts. *Educational Psychologist*, 27, 177-196.
- Grolnick, W. S., Ryan, R. M., & Deci, E. L. (1991). Inner resources for school achievement: Motivational mediators of children's perceptions of their parents. *Journal of Educational Psychology*, 83(4), 508-517. doi:10.1037//0022-0663.83.4.508
- Jacobson, D. (2010). Coherent Instructional Improvement and PLCs: Is It Possible to Do Both?. *Phi Delta Kappan*, 91(6), 38-45.
- Reeve, J., & Jang, H. (2006). What Teachers Say and Do to Support Students' Autonomy During a Learning Activity. *Journal of Educational Psychology*, 98(1), 209-218. doi:10.1037/0022-0663.98.1.209
- Jang, H. (2008). Supporting students' motivation, engagement, and learning during an uninteresting activity. *Journal of Educational Psychology*, 100(4), 798-811. doi:10.1037/a0012841
- Jimerson, S. J., Campos, E., & Greif, J. L. (2003). Toward an Understanding of Definitions and Measures of School Engagement and Related Terms. *California School Psychologist*, 87-27.
- Joyce, B. & Showers, B. (2002). *Student achievement through staff development* (3<sup>rd</sup> ed). Alexandria, VA: Association for Supervision and Curriculum Development.
- Kagan, S. (2014). Kagan structures, processing, and excellence in college teaching. *Journal on Excellence in College Teaching*, 25(3&4), 119-138.
- Kelly, S. (2008). Race, social class and student engagement in middle school English classrooms. *Social Science Research*, 37, 434-448.
- Knight, J. & Cornett, J. (2008). *Studying the impact of instructional coaching on teacher practice*. University of Kansas: Kansas Coaching Project at the Center for Research on Learning and Department of Special Education. Retrieved from: [http://www.instructionalcoach.org/images/downloads/research-pubs/Studying\\_the\\_Impact\\_of\\_Instructional\\_Coaching\\_4.0.pdf](http://www.instructionalcoach.org/images/downloads/research-pubs/Studying_the_Impact_of_Instructional_Coaching_4.0.pdf)

- Kusurkar, R. A., Croiset, G., & Ten Cate, T. J. (2011). Twelve tips to stimulate intrinsic motivation in students through autonomy-supportive classroom teaching derived from Self-Determination Theory. *Medical Teacher*, 33(12), 978-982. doi:10.3109/0142159X.2011.599896
- Lee, V. E., & Smith, J. B. (1995). Effects of High School Restructuring and Size on Early Gains in Achievement and Engagement. *Sociology of Education*, 68(4), 241-270. doi:10.2307/2112741
- The Literacy and Numeracy Secretariat. (2010). Collaborative teacher inquiry. *Capacity Building Series*, (16), 1-8. Retrieved from [http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS\\_Collaborative\\_Teacher\\_Inquiry.pdf](http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS_Collaborative_Teacher_Inquiry.pdf)
- Little, J. W. (2006). *Professional community and professional development in the learning-centered school*. Washington, DC: National Education Association.
- Maehr, M. L., & Meyer, H. A. (1997). Understanding motivation and schooling: where we've been, where we are, and where we need to go. *Educational Psychology Review*, 9371-409.
- Mageau, G. A., & Vallerand, R. J. (2003). The coach-athlete relationship: A motivational model. *Journal of Sports Sciences*, 21(11), 883-904. doi:10.1080/0264041031000140374
- Marks, H. M. (2000). Student Engagement in Instructional Activity: Patterns in the Elementary, Middle, and High School Years. *American Educational Research Journal*, 37(1), 153-184. doi:10.3102/00028312037001153
- Newmann, F. M., Wehlage, G. G., & Lamborn, S. D. (1992). *The significances and sources of student engagement*. In F. M. Newmann (Ed.), *Student engagement and achievement in American secondary schools* (pp. 11-39). New York: Teachers College Press.
- Nota, L., Soresi, S., Ferrari, L., & Wehmeyer, M. (2011). A Multivariate Analysis of the Self-Determination of Adolescents. *Journal of Happiness Studies*, 12(2), 245-266. <http://dx.doi.org/10.1007/s10902-010-9191-0>
- Park, S., Holloway, S., Arendtsz, A., Bempechat, J., & Li, J. (2011). What Makes Students Engaged in Learning? A Time-Use Study of Within- and Between-Individual Predictors of Emotional Engagement in Low-Performing High Schools. *Journal of Youth & Adolescence*, 41(3), 390-401. doi:10.1007/s10964-011-9738-3
- Prensky, M. (2005). Engage me or Enrage me. *EDUCASE Review*, 40(5), 61-64.
- Reeve, J., Bolt, E., & Cai, Y. (1999). Autonomy-supportive teachers: how they teach and motivate students. *Journal Of Educational Psychology*, 91(3), 537-548. doi:10.1037/0022-0663.91.3.537

- Reeve, J., Jang, H., Hardre, P., & Omura, M. (2002). Providing a rationale in an autonomy-supportive way as a strategy to motivate others during an uninteresting activity. *Motivation and Emotion*, 26, 183–207
- Reeve, J. j., Jang, H., Carrell, D., Jeon, S., & Barch, J. (2004). Enhancing Students' Engagement by Increasing Teachers' Autonomy Support. *Motivation & Emotion*, 28(2), 147-169.
- Reeve, J. (2006). Teachers as Facilitators: What Autonomy-Supportive Teachers Do and Why Their Students Benefit. *Elementary School Journal*, 106(3), 225-236. doi: 10.1086/501484
- Reeve, J. (2009). Why Teachers Adopt a Controlling Motivating Style Toward Students and How They Can Become More Autonomy Supportive. *Educational Psychologist*, 44(3), 159-175. doi:10.1080/00461520903028990
- Russell, V. J., Finely, M., & Frydenberg, E. (2005). Schooling issues digest: Student motivation and engagement. Retrieved November 25, 2014, from <http://ftp.scu.edu.tw/scu/sr/Learning%20%20Outcome/SchoolingIssuesDigestMotivationandEngagement.pdf>
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68–78.
- Schuster, S. (2012). Learner Autonomy: A Theoretical Phantasm? *The International Journal of Learning*, 18(4), 160-180.
- Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, 85(4), 571-581. doi:10.1037//0022-0663.85.4.571
- Sparks, S. D. (2014). An Age-Old Problem Gets New Attention. *Education Week*, 5-9.
- Tapscott, D. (1998). *Growing up digital: The rise of the net generation*. New York: McGraw-Hill.
- Taylor L, Parsons J. Improving Student Engagement. *Current Issues In Education* [serial online]. March 2011;14(1):1-32. Available from: Education Source, Ipswich, MA. Accessed January 17, 2015.
- Willms, J. D. (2003). Student engagement at school: A sense of belonging and participation. Paris: Organisation for Economic Co-Operation and Development.

## Appendices

### **Appendix A: Pre-Intervention Survey**

1. How would you define student engagement? (*Open ended*)
2. Students at this school are highly engaged in their classes. (*Respond with Strongly Agree, Agree, Disagree, or Strongly Disagree*)
3. Students in my classes are highly engaged. (*Respond with Strongly Agree, Agree, Disagree, or Strongly Disagree*)
4. From your own experience in the classroom, what do you believe are the factors that most significantly cause student engagement? (*Open ended*)
5. Autonomy in the classroom means that students have the opportunity to be self-initiating and self-regulating in their own actions. What types of teacher behaviors would encourage students to exhibit these qualities? (*Open ended*)
6. Encouraging autonomy in the classroom can increase student engagement. (*Respond with Strongly Agree, Agree, Disagree, or Strongly Disagree*)
7. I encourage students to be autonomous in my classroom. (*Respond with Strongly Agree, Agree, Disagree, or Strongly Disagree*)
8. If you chose agree or strongly agree above, in what ways do you encourage autonomy in your classroom? (*Open ended*)

### **Appendix B: Post-Intervention Survey**

1. How would you define student engagement? (*Open ended*)
2. Students at this school are highly engaged in their classes. (*Respond with Strongly Agree, Agree, Disagree, or Strongly Disagree*)
3. Students in my classes are highly engaged. (*Respond with Strongly Agree, Agree, Disagree, or Strongly Disagree*)
4. After participating in this collaborative inquiry process, what do you believe are the factors that most significantly cause student engagement? (*Open ended*)
5. How would you define student autonomy in the classroom? (*Open ended*)
6. What teacher behaviors best encourage student autonomy? (*Open ended*)
7. Encouraging autonomy in the classroom can increase student engagement. (*Respond with Strongly Agree, Agree, Disagree, or Strongly Disagree*)
8. Using the active participation strategy was effective in increasing student engagement in my classroom. (*Respond with Strongly Agree, Agree, Disagree, or Strongly Disagree*)
9. I encourage students to be autonomous in my classroom. (*Respond with Strongly Agree, Agree, Disagree, or Strongly Disagree*)

10. This inquiry process was effective in improving my practice as a teacher. (*Respond with Strongly Agree, Agree, Disagree, or Strongly Disagree*)

11. What I appreciated most about this process was... (*Open ended*)

12. What I would like to improve about this process is... (*Open ended*)

**Appendix C: Baseline Observation Template**

Teacher Name:	Date:
Class:	Grade:
Objective of lesson:	

**Student Behavior Note Taking Form**

Time	Active engagement	Passive compliant/ attentive behavior	Disengaged motor	Disengaged verbal	Disengaged passive
0-5 minutes					
6-10 minutes					
11-15 minutes					
16-20 minutes					

**Teacher Behavior Note Taking Form**

Active Engagement Indicator	Present ✓	Description of how teacher structured this component of strategy
Students are collaborating with peers in groups or in partners		
Positive interdependence (success of group depends on success of individuals)		
Individual accountability		
Equitable participation of all students		
Structure in place so that multiple students can participate at once		
Task is group worthy		

## Appendix D: Post-Intervention Observation and Debrief Template

### Intervention 2.0 Observation Tool

**Step 1:** Teacher shares relevant background information about class (grade, course, topic being studied), who the focus students are and why they were chosen. (2 minutes)

**Step 2:** Observers ask teacher any clarifying questions. (2 minutes)

**Step 3:** Observers and teacher watch video and take notes in the graphic organizer below (20 minutes)

**Step 4:** Observers and teachers share and discuss notes (10 minutes)

### Student Behavior Note Taking Form

Paying specific attention to the focus students, note student names and behaviors as you see them occur in the appropriate categories.

Teacher Name:	Date:
Class:	Grade:
Objective of lesson:	

Time	Active engagement	Passive compliant/ attentive behavior	Disengaged motor	Disengaged verbal	Disengaged passive
0-5 minutes					
6-10 minutes					
11-15 minutes					
16-20 minutes					

### Teacher Behavior Note Taking Form

Active Engagement Indicator	Present ✓	Description of how teacher structured this component of strategy
Students are collaborating with peers in groups or in partners		
Positive interdependence (success of group depends on success of individuals)		
Individual accountability		
Equitable participation of all students		

Structure in place so that multiple students can participate at once		
Task is group worthy		

**Appendix F: Collaborative Inquiry Group Sample Agenda Template**

<b>Date:</b>	<b>Members Present:</b>
<b>Unity High School Staff Interaction Norms:</b> <ul style="list-style-type: none"> <li>• Respect time by starting on time and ending on time</li> <li>• Demonstrate collegiality and mutual respect by assuming best intentions</li> <li>• Cultivate a growth mindset to achieve high expectations</li> <li>• Be willing to be in the "brave" space by stepping up, stepping back, and embracing challenges and shortcomings</li> <li>• Practice honesty, empathy and open-mindedness</li> <li>• Honor the work with undivided attention</li> </ul>	
<b>Meeting Objective:</b> <ul style="list-style-type: none"> <li>• Build a common understanding of the purpose, process and intended outcomes of the collaborative inquiry group</li> <li>• Develop community</li> <li>• Construct a common understanding of engagement</li> </ul>	

Approximate Time	Meeting Action	Notes
12-12:10	Overview of purpose, process and intended outcomes of collaborative inquiry group	
12:10-12:25	Pre-intervention survey	
12:25-12:40	Community building: Why did you decide to join this inquiry group and what are your hopes and dreams for our students?	
12:40- 1:00	Defining engagement: How do we know if a student is engaged? What does an engaged student look like, sound like, and act like?	

Action	By Whom?	By When?	Notes

## **Appendix G: Teacher Reflective Journal**

Teachers will be completing a reflective journal in Google docs after each collaborative inquiry meeting and coaching session. The following questions are to help guide teachers to reflect on the impact and process data I am seeking to collect and are not meant to limit teachers from writing about other relevant topics.

1. Based on this session, what are your next steps?
2. What questions do you still have?
3. How has your thinking changed as a result of this session?
4. How would you describe the current level of student engagement in your classroom? What do you attribute this level to?

## **Appendix H: Researcher Reflective Journal**

I will be completing a reflective journal in Google docs after each collaborative inquiry meeting and coaching observation and debrief. The following questions will help guide me to reflect on the impact and process data I am seeking to collect and are not meant to limit me from writing about other relevant topics.

### *Post-observation*

1. How effectively did the teacher use X autonomy supportive strategy?
2. What teacher behavior changes were noted in the observation?
3. How effective is the observation template in capturing the autonomy supportive strategy?
4. What changes would make this tool more useful?

### *Post-coaching session and post-collaborative inquiry meeting*

1. Were the goals of the session met? How effectively?
2. What next steps were planned?
3. What changes to the structure of the session would make this a more effective use of time?
4. Other notes related to teacher ability or attitude toward x autonomy supportive strategy.

## **Appendix I: Active Participation Critical Friends Protocol**

### **1. Presentation (3 minutes)**

- The presenter has an opportunity to share the context:
  1. Relevant background information about the students and/or the class- grade, subject, baseline survey/ observation data, challenges and strengths of students
  2. Intervention: describe the intervention you have designed
  3. Successes and challenges noted so far: describe what has been going well and what could be going better
- Participants are silent; no questions are entertained at this time.

**2. Clarifying and Probing Questions (2 minutes)**

- Participants have an opportunity to ask “clarifying” questions in order to get information that may have been omitted in the presentation that they feel would help them to understand the context. Clarifying questions are matters of “fact.”
- Participants should then ask “probing” questions should be worded so that they help the presenter clarify and expand his/her thinking about the dilemma presented to the group.

**3. Warm and Cool Feedback (5 minutes)**

- Participants share feedback with each other while the presenter is silent. The feedback generally begins with a few minutes of warm feedback, moves on to a few minutes of cool feedback (sometimes phrased in the form of reflective questions), and then moves back and forth between warm and cool feedback.
- Warm feedback may include comments about how the work presented seems to meet the desired goals; cool feedback may include possible “disconnects,” gaps, or problems. Often participants offer ideas or suggestions for strengthening the work presented.
- The facilitator may need to remind participants of the presenter’s focusing question, which should be posted for all to see.
- Presenter is silent and takes notes in their reflective journal.

**5. Reflection (2 minutes)**

- Presenter speaks to those comments/questions he or she chooses while participants are silent.
- This is not a time to defend oneself, but is instead a time for the presenter to reflect aloud on those ideas or questions that seemed particularly interesting.
- Facilitator may intervene to focus, clarify, etc.

**Participant Note Taking Guide**

<b>Presenter:</b>	
<b>Focus Question:</b>	
<b>Context:</b>	
<b>Clarifying Questions:</b>	
<b>Warm Feedback:</b>	
<b>Cool Feedback and Suggestions:</b>	