Implementation of the Teamwork Skills Inventory Among Adolescents

by

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ABSTRACT

Individual and group accountability is an important part of productive group work. However, classroom evaluation of teamwork often relies on top-down assessment of group product by the teacher. Other methods include averaging group grades, group discussions, evaluative essays and random selection and application of one member's grade to the entire team. In contrast, the Teamwork Skills Inventory (TSI) developed by Strom and Strom provides assessment of individual conduct and contributions as observed by peers. The instrument also affords students with the opportunity to judge their own performance. Team members are responsible for their own behavior and skill development but are not held accountable for the actions taken by others. The TSI provides criteria for productive teamwork skills and behaviors. Students know in advance the criteria by which they and their teammates will judge each other's behavior skills. In turn, students have the opportunity to practice self-evaluation as they apply the same criteria to assess their own conduct. Self-evaluation compared with peer-evaluation provides support for confidence in behavioral strengths and can guide goal setting in areas where skills are weak and need adjustment. The TSI gives teachers an insider's view of group dynamics: the obstacles and benefits groups may encounter. Since team members have the vantage point of close interaction with peers they are more likely to know how individuals affect the thinking of others in a group. This frees teachers from the difficult task of judging group dynamics. TSI results can guide teachers in developing lessons

that address the needs of individuals and groups. Data derived from the TSI can help schools provide for the needs of subgroups, such as special education and gifted classes. It can also help schools detect in-service needs for faculty and provide schools with a method of community accountability for use with cooperative learning methods and social skill achievement.

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Chapter 1

INTRODUCTION TO TEAMWORK

The main purpose of schools is to prepare students for the future. In a rapidly changing society knowing how to prepare for the world of tomorrow is complicated but research has determined that the ability to work in teams will be essential. Teaching teamwork skills requires new methods of teaching and changes in the structure of traditional education with support from communities. There are many issues to reflect on when making reforms in school systems. This chapter presents an overview of emerging questions that can guide considerations for improving conditions of learning for students.

Identifying the Need for Change

One of the purposes of education is to help students acquire the knowledge and skills that will enable them to function successfully as adults (Trilling & Fadel, 2009). Therefore, students should have the opportunity to practice the skills anticipated as essential for living in a rapidly changing technology-driven society. Studying trends in nationwide lifestyles and reviewing changes in the business world and labor market can help identify important trends that should be incorporated into education. One important transition that deserves attention is the shift of business and industry away from the rugged individualist toward the cooperative teamwork paradigm (Datar, Garvin, & Cullen, 2010). This transformation requires adolescents to develop skills and abilities that will allow them to perform as members of a team working toward a common goal.

Learning to work-together has not been a priority in American classrooms (Weber, 2010). Emphasis has been on direct instruction that is competition-based where individuals work alone rather than cooperating in teams. It is sometimes assumed that grouping students together to work on assignments will result in teamwork. However, when given a joint task to complete, people will not spontaneously respond with productive teamwork. In contrast, classroom teaching that is structured through the cooperative learning style can help students acquire necessary teamwork skills (Roseth, Johnson & Johnson, 2008). This departure from the past requires a new orientation for teachers as they embrace the emerging possibilities of helping students learn by cooperating in teams. Research helps psychologists and educators refine collaborative teaching methods. In addition, for students to benefit from new methodologies, classroom teachers need training and a sense of commitment to the importance of new standards. Incorporating teamwork skills into classroom instruction requires the consideration of various issues. What follows is a brief introduction to some of these issues presented as questions for consideration.

How can teamwork skills contribute to career preparation? In a survey of MIT alumni, 70% reported that teamwork skills were important in career preparation. However, only 58% reported that their years at MIT had helped in that preparation (Breslow, 1998, para. 2). Teamwork skills cannot be learned from any and all group experience. Currently many teachers lack the training needed for teaching in the cooperative learning style that fosters teamwork and social skills (Antil, Jenkins, Wayne, and Vadasy, 1998). New

methods of teacher training are needed. Teaching team cooperation skills requires that teachers carefully arrange a variety of elements, including management of student teams and structure of assignments. In a well-structured team experience students learn from each other as well as the teacher and have the opportunity to experience team structures used in many workplace settings while still in a low-risk situation (Fisher and Frey, 2008). Businesses eliminate poor performers (C. M. Brown, Vice-president Technology Manufacturing Group and Materials Director, Intel Corp., personal communication, March 28, 2010). But, a school setting can allow students to improve weak skills as they learn to contribute to team goals. Team and social skills learned in the classroom are valuable in both personal and professional life. They are enduring assets that help students become self-directed learners and gain a sense of how they can continue to learn throughout their lives (Goleman, 2006).

How can students be oriented to the relevance of teamwork? Fisher and Frey (2008) suggest that there are four elements that contribute to a successful collaborative learning experience. One of these elements is guided instruction that helps students understand the importance of teamwork skills. In-class discussions, visiting panels of community business leaders or parents and outside interviews of business team members can help teens understand the prominence of teamwork models in the work place and also help students understand the importance of acquiring teamwork skills. By incorporating classroom lessons and interaction with community members teens can gain valuable insight into the importance of these skills.

Collaborative teams working together have increased creativity, productivity and revenue for many companies. For example, after Boeing implemented a team concept with employees the company saw a 50% decrease in engineering problems on its 777 jets and Federal Express noted a 40% increase in productivity (Davis & Miller, 1996; Howard, 1999). Knowing facts such as these helps students understand why teamwork structures are so important in the business world. Most adolescents are also familiar with other teams that have had a major impact on modern society, such as Apple by making computers easy to use and widely accessible to non-experts, the entertainment visionaries at Disney and the Manhattan Project scientists who saved lives by hastening the conclusion of a world war. The quotation, "None of us is as smart as all of us," (Bennis & Biederman, 1997, p.1) is a vivid description of the need for collaborative brainpower.

How can students learn to work in interdependent teams? Training for teachers is vitally important. Research has shown that while some form of group work has almost always been used for instruction, it has only been in more recent years that the method has been systematically examined in order to understand ways to make it productive (Antil, Jenkins, Wayne & Vadasy, 1998). Teachers must acquire the specific training needed for productive group work. There is a need for teachers to understand their role and responsibility in the shift toward guiding students in teamwork abilities. This is still a challenge facing many colleges of education. It is difficult to abandon the idea that teachers are the sole source of learning and information in the classroom. Cooperative

learning requires that students take less passive role and become more active in their education (Strom & Strom, 2009). However, collaborative teaching moves teachers away from comfortable traditional methods of instruction and teachers will need support from districts and principals in their endeavors. Without adopting newer appropriate methods, poorly planned group work will fail to teach the necessary skills. In addition, since cooperation and conflict are inherently related, group success can be undermined if groups encounter difficulties outside the teacher's skill level for constructive management. Failures such as this make the process distasteful and disheartening for teachers and students alike.

Accountability of both team and individuals is important (Smith, 2008). Skills that will be evaluated should be discussed before beginning group projects helping students understand what is expected of them. Reviewing these same skills and performing a formative evaluation at mid-point during the project not only helps students keep the learning goals in mind but also gives an opportunity to self-correct and make behavior improvements before summative evaluation. By reviewing and comparing evaluations teachers can identify specific needs of both individuals and groups that require further instruction and development (Strom & Strom, 2010).

How are teamwork skills of students evaluated in classrooms?

Classroom assessments of teamwork are often based on methods proposed over half a century ago (Deutsch, 1949a, 1949b: Sherif, 1958). One such method is the discussion group. This method of oral evaluation requires team members to openly discuss the contributions and limitations of their peer. But, some students

are uncomfortable in face-to-face evaluations where they fear rejection or retaliation. Another method is the evaluative essay where all group members submit written evaluations and descriptions of each other's contribution. This method is time-intensive for students and teachers. Other methods involve (a) averaging test scores of team members and assigning the averaged score to all team members, (b) randomly selecting one member's score for application to all group members, or (c) awarding exam points when all members of a team can achieve a specific level of performance. The above methods assume that self-interest in good grades will motivate team members to help each other and therefore improve group productivity. Unfortunately, these methods fall short of their goal and often cause high-achieving students to resent working with less capable and non-working students (Van Tassel-Baska, 2007). More effective methods are needed.

How can students acquire peer and self-evaluation skills? Traditional evaluation of teamwork focused on the teacher as evaluator of the final product and ignored the process and dynamics that allowed the group to complete its work. Teachers cannot possibly observe all groups at once. In order to effectively evaluate group work they need an internal view of the group process and contributions of group members, which is not available by external product evaluation. However, team members know the influence of the peers; which students work hard, what they learn from each other and how well the group got along. Therefore, students themselves are the best evaluators of the group process (Girod, Pardales, Cavanaugh & Wadsworth, 2005). It follows then, that students

should be allowed to practice peer evaluation (Scardamalia, 2002). Student evaluation of group process not only provides teachers with an insider's view of the group but also presents teachers with the opportunity to learn vicariously from the observations of students.

Using the same evaluation form for both peer and self-assessment affords adolescents a view of the skills and processes needed for evaluation of all team members (Strom and Strom, 2010). Students should have an opportunity to observe peer behavior for a sufficient amount of time before being asked to engage in evaluation. Anonymity in the peer evaluation process is important as it frees students to fairly evaluate friends or peers with whom they do not get along. In their first attempts most teens will approach the task by inflating evaluations of friends and vengefully evaluating peers with whom they do not get along. Eventually, by comparing personal evaluation with peer observations of their performance, individuals learn to accept critique and gain a balanced perspective of their performance. With guidance and practice teens can acquire the skills needed to perform evaluations fairly.

Trusting students to share in the evaluation process can be difficult for teachers. Some believe students cannot be trusted to evaluate each other fairly. However, it is difficult for students to develop skills they do not practice. Therefore, it is important for students to be given opportunities to reason, draw conclusions and act on decisions (Smith, 2008). Teachers who cannot trust enough to relinquish some responsibility to students will deprive them of practice

in decision-making and thereby hinder development of both evaluation and teamwork skills.

How can students get feedback to identify learning needs? Sharing the responsibility of feedback between teacher and student can help identify the learning needs of individuals. Businesses use a 360-degree approach to evaluation by having both co-workers and supervisors evaluate individual performance. This evaluation from multiple perspectives provides a broad view of an individual's skills (Evans & Wolf, 2005). Like supervisors in the workplace, teachers cannot know what individual students contribute to a team nor can they know the influence of one member on another. Only job co-workers and team members have the frequent interaction that allows the vantage point of close observation of skills and limitations displayed by peers during the group process (Gillies, 2007). In learning to accept both criticism and praise for behaviors individuals can gain valuable skills for life-long goal setting and development.

How can parents enable students to gain teamwork skills? Many parents have noted the importance of getting along in the family setting. Children who can work well with others tend to have enduring friendships, better marriages, and are able cooperate with family, friends and, later, job colleagues. Social skills help children and families navigate their daily lives (Goleman, 2006). Additionally, helping adolescents learn to confide in parents creates a bond that allows teens to deal more successfully with stress. Schools

and families need to work together in the development of important social skills (Brown, Teufel, Birch & Kancheria, 2006).

In the beginning stages of teamwork instruction teachers should send home a list and description of skills to be developed and evaluated. This allows parents to discuss team skills with students, familiarize students with each skill and alert them to the necessity of observing behavior in themselves and their teammates. Parents should be encouraged to share with their teens the ways in which they use team skills at home and on the job. Reinforcing the importance of fair evaluation of peers and encouraging adolescents to focus on personal growth is another way parents can be included. Framing the family as a team then discussing progress and setbacks in teamwork noted by parents can lend support to the learning process at school (National Coalition for Parent Involvement in Education, n.d.).

Developmental, Employment and Social Considerations

In early adolescence, age 10 or 11, children become capable of looking at ideas and events from various viewpoints. Later, they develop the capacity for critical analysis, introspection and self-evaluation (Piaget, 1963). Throughout the adolescent years, teens enjoy and prefer working and interacting with their peers and classmates (Mueller & Fleming, 2001). This particular set of emerging abilities and strengths enables and motivates teens to especially benefit from working in cooperative learning groups. Beginning with middle school and continuing through college are prime years to begin acquiring and developing collaboration skills. Classrooms are ideal laboratories for teamwork skills

instruction, particularly when their students vary in gender, ethnic and religious backgrounds and inclusion strategies. Students have the right to expect that their education will help prepare them for life and a career, not just for state and national exams (Strom & Strom, 2009). Teamwork skills are social abilities that last a lifetime unlike some classroom skills that may disappear soon after the termination of an exam.

Adolescents need team skills for career development and familial and societal stability (Klaus, 2008). Meeting the needs of the businesses and industry marketplace should also be of concern as students prepare for careers. Increasingly, companies search for entry-level employees who have good social skills and can successfully work in teams. Skillful entry-level employees allow business and industry to continue building the goods and services that are the basis of a strong economy rather than re-educating new employees. Familial stability is also affected by the development of team and social skills. Healthy families and marriages can share and work together; in essence they are a set of teams. The same skills needed at school for teamwork are needed at home. They promote better emotional health, and help avoid serious social problems such as domestic conflicts, child abuse and criminal conduct. Teamwork skills are lifelong assets that can ultimately benefit the larger society (Goleman, 2006). Development of these abilities should not be left to chance.

Noting the need for better methods of evaluation in the teamwork process Strom and Strom (2010) developed the Teamwork Skills Inventory, originally named the Interpersonal Intelligence Inventory (Strom & Strom, 2002a). This

instrument is an anonymous evaluation of peers in teamwork settings. It allows students to share impressions about team members with the teacher and simultaneously, provides self-assessment. The implications for adolescent development of teamwork skills through the use of this instrument are wide-ranging. This investigation is devoted to the description, implementation and benefits of the Teamwork Skills Inventory (TSI) for adolescents.

Chapter 2

REVIEW OF RELATED LITERATURE

In this chapter teamwork is defined. Usage of teamwork in business and industry is explored in an effort to understand its growing prominence. The direct method of instruction is compared to the collaborative learning style that fosters teamwork and social skills while also providing for inclusion of newer technologies. Other possibilities for collaboration and reforms, especially reform of evaluative measures, are discussed.

Defining Teamwork

Miriam-Webster's On-line Dictionary defines teamwork as the "work done by several associates with each doing a part but all subordinating personal prominence to the efficiency of the whole". Effective teamwork is more than the sum of individual accomplishments. It is the harmonization of individual contributions in accomplishing a common goal not possible by the efforts of a single individual. Some see this as a loss of individuality but to the contrary, only a group of individuals can create a team. Only individuals can choose to help the group achieve its goals (Nondestructive Testing Resource Center, n.d.). What was once a sports related concept has now become a common and widely accepted practice in both business and industry. Teamwork increases productivity and creativity while increasing revenue or decreasing expenses. All are desirable outcomes for a business whether large or small. As might be expected then, the concept is now applied across various disciplines from a sports team to a team of engineers working on the latest software operating systems.

In studies of American businesses, Boyett and Snyder (1998) found that indeed there has been a dramatic increase in the use of "cross-functional, multi-disciplinary teams with globally and ethnically diverse memberships. Already, one-third of American companies with fifty or more employees have half or more of their employees working in self-managed or problem-solving teams. Many of these teams have no traditional boss or supervisor. Instead, team members take on responsibility for planning, organizing, staffing, scheduling, directing, monitoring, and controlling their own work. Indeed, in order to accomplish its goals, Intel uses a team matrix model that crosses disciplines, functions and levels of hierarchy. Team members have specific roles and responsibility for that role. This model seems to allow for flow of ideas in multiple directions and work can progress at a pace not possible when plans must move between departments (C. M. Brown, 2010). The collaborative teamwork approach to research, development and production has risen to prominence partly because technology allows ever more complex and creative products and solutions to problems. The information explosion has created a need to solve complicated multidisciplinary problems. Today many companies produce goods that require the diverse knowledge and variety of skills and abilities that only a team can provide. By splitting up the project, work can move forward on parallel tracks and the ultimate goal can be accomplished faster. Additionally, many products can be produced more efficiently and less expensively through teamwork.

Economic Benefits Arising from Teamwork

Examples of the marked improvements businesses have experienced through the use of effective teaming are abundant. General Electric's plant in Wilmington, North Carolina used teamwork to increase its productivity by 250% as compared to other GE plants not using teams. For a Northern Telecom repair facility that had traditionally been a money losing plant, self-directed teams increased revenue by 63% (Natale, Libertella, & Rothschild, 1995). Teamwork at IBM Credit slashed processing of credit applications from a plodding six days to only four hours. At the San Diego Zoo cross-disciplinary professionals work in teams to create bio-climatic zones that originally required the work of 51 separate departments (Bridges, 1994). These examples demonstrate the effectiveness of collaborative brainpower and the ability of highly functioning teams to increase productivity, creativity and efficiency while decreasing expenses. Massachusetts General Hospital uses teams of radiologists in India to read 30 or more CT scans daily, making information available to doctors faster and less expensively than when read by on-site specialists (Engardio, Bernstein, Kripalani, Balfour, Grow, & Greene, 2003). A landscape design team in Vancouver, B.C. produces landscape plans and blueprints for unseen clients using photos and phone consultations faster and with less cost than other firms using individual designers working a design from inception to completion. (Canziani & Cross, 2010). Teamwork skills have become crucial for employment and employees need the ability to work cooperatively and productively with co-workers of the opposite sex, multiple generations, various disciplines, religions and different

cultural backgrounds. The use of teamwork to accomplish business goals requires a shift in educational methodology (Boyett & Snyder, 1998).

Generational and Cultural Considerations

Besides the needs of businesses for employees prepared to collaborate in teams, researchers studying the Me Generation born between 1970 and the mid-1990's, also called Generation Y, have identified weaknesses developing with our society that need to be addressed both at home and at school (Twenge & Campbell, 2010). Baby Boomers who parented this generation, often used praise and rewards to show affection but rarely criticized. Involved with their own careers, and favoring permissive parenting styles, Boomers tended to neglect the less pleasant activities of correcting behavior problems or instilling values.

Generation Me is adept in the use of technology such as gaming devices, online communications and cell phones (Epstein, 2007; Twenge, 2006). However, current research points to lack of empathy and compassion as the consequences of exposure to the violence in video games. Studies have also concluded that time spent online or on cell phones can encourage selfishness and self-promotion as children of this generation interact in cyberspace and lack experience with reality (Bartholow, 2005; Coeckelbergh, 2007; Kirsch, 2006). Teamwork and evaluation skills teach that everyone must work together or the selected project cannot be completed. In turn, evaluation helps students see and accept failures that with effort can be improved.

Those of Generation Me born in the 1970's have already entered the work force and those born in the 1990's are in high school. Each generation has good

characteristics and others that are less desirable. If business and society as a whole are to improve and adapt to the needs of upcoming generations we need better methods of teaching teamwork and evaluation. New methods should include learning outside the classroom that incorporates generational, cultural and ethnic resources. Adolescents need social skills that help them get along with others of different generations, races, religions and cultures, while also allowing them to be competitive for jobs in the worldwide business market. Society needs skilled parents and teaching methods that improve cultural and generational weaknesses. Schools, families and communities can function as teams through the development of teaming in classrooms. Structured conversations and interviews with community members, businesses leaders, parents and relatives are needed to help students integrate the views from other cohorts into their understanding. These types of experiences with people outside the teen peer group help provide a more constructive outlook and broader perspective than conversations within the peer group that provide only that group's perspective. Inter-generational conversations can also open the way for reciprocal learning.

Changing Structures

Methodology for teacher preparation has often focused on direct instruction wherein teachers are trained experts in the subject matter and thought of as the sole source of information within the classroom. Direct instruction often involves lecturing as the principle method for disseminating information. This approach places the student in a passive role, one where instruction is

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received. The student's role is to pay attention, take notes, and prepare for exams of mostly memorized material. In this model the student has little responsibility to add to the content of course work.

Direct instruction may have worked well in the past when the pace of societal and technological change was slower. But with the current rapid advance of technology, students will use tomorrow's technology for jobs that do not exist today in today's market. Faced with these challenges, memorization of material may be of little value. Also, unlike some of their parents and most of their grandparents, today's student cannot expect to have lifetime employment at a single company until retirement. And unlike previous generations who generally worked with people of similar backgrounds, today's adolescents must somehow prepare for work with colleagues of widely divergent backgrounds, skills and abilities. As future employees they will likely work in a diverse and constantly changing workplace, quite possibly transferring to multiple locations around the globe (Boyett & Snyder, 1998). Teamwork and social skills that transfer to various settings and among colleagues of multiple ages, generations and races will become increasing important.

The task for educators becomes finding methods that foster development of teamwork skills. Some reformers have suggested that fewer lectures by teachers and more discussion among students or even simply having students work in groups will allow students to gain the teamwork skills they need. But research shows that placing students in a group with a project to complete does not necessarily produce beneficial or productive teamwork (Johnson, Johnson &

Holubec, 1993). A more comprehensive approach is needed to address the issue of training students to function and benefit from grouping in groups. And since teamwork skills are acquired gradually as a result of the right kinds of experiences, the practice of these skills should be a continual process (Frey, Fisher & Everlove, 2009). Research suggests that it should include non-traditional resources such as the Internet, computers, satellite television and other digital devices (Manzo, 2009). There are many educational resources available today. Knowing how to connect and include everything would be difficult but the search for creative alternatives should continue.

Schools are moving forward in implementing novel approaches and training teachers in the specifics of the cooperative or collaborative learning approach. MBA programs for graduate level business students have included team models of instruction for almost a decade. Some secondary schools that focus on a science and technology curriculum have also begun to include collaborative teaching methods, but many teachers still struggle to make group or team work productive. They also have difficulty promoting interaction with the groups and are failing to capitalize on the benefits of collaborative teaching and teamwork (Tomlinson, Moon & Callahan, 1997).

Failure to work in teams at school affects teachers as well. Working in teams is more common for teachers in middle schools, but it less common in junior highs and high schools. Most high schools teachers do not know which other faculty members may be teaching their students throughout the day. Teamwork among teachers would allow for collaboration. Teaching is one

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of the few remaining professions where an individual employee works

alone. Research shows that new teachers mentored through a team approach are

happier and less likely to quit. Teachers who collaborate in teams are more likely

to remain in teaching positions than those who lack this type of interaction and

support (Gideon, 2002). When teachers quit students are adversely affected by

the lack of continuity. Loss of teachers is an issue for almost all school districts

(Shulman & Sato, 2006). Retention of teachers provides greater continuity for

students, schools and districts.

As educational structures change, advocates such as the National Coalition

for Parent Involvement in Education (NCPIE) hope for parent inclusion in the

team model. Because teachers rarely work in teams most parents will have more

experience with teamwork in the workplace. If teachers and parents work as a

team, then both teachers and students can benefit from the teamwork experience

and advice that parents can offer. Some schools already invite speakers from the

business community. Parents could be included through this same

method. Searching for other ways of including parents benefits both students and

schools. Allowing parents, communities, schools and students to collaborate

would closely resemble the team matrix model used by some businesses and

could include various functions, generations and disciplines.

Reforming Teacher Training

The cooperative learning approach stems from more than 60 years of

research in the fields of sociology, psychology and anthropology. It includes

organizing students in groups or teams as a method for studying course content

and provides opportunity for students to expand their depth of study by merging their individual efforts with those in their immediate group. In some cases, other group members from more distant locations may be included through the Internet or other technologies (Gillies, 2007). Learning through teamwork requires each group member to perform one or more tasks that advance the team toward the completion of its goal. In this way students learn subject content as well as practice social and team skills. Team projects should be structured so that without the combined efforts of all individuals the project-goal cannot be completed (Johnson & Johnson, 2003). While the concept is not particularly complex, helping students learn to communicate with, listen to and work well with each other requires training and skill. A teacher's skill-level in forming teams, selecting projects, arranging class time and counseling or guiding groups that struggle will all affect the outcome of the group experience and student learning (Fisher & Frey, 2008).

Developing skill in collaborative teaching methods is well worth the effort. Teamwork in schools benefits students, just as teamwork in the work place benefits businesses. Studies of collaborative group work have shown that students working in team settings improve in academic performance, develop better problem-solving skills in reasoning and critical thinking than their peers in more competitive classroom settings (Topping & Trickey, 2007). Students also report more satisfaction with their course experience (Mueller & Fleming, 2001). Other research on teamwork found that cooperating students generated more and better ideas during discussions than those in competitive groups. In

addition, cooperating students communicated more effectively and listened to and considered comments from teammates more frequently than their competitive counterparts. They also tried to motivate others and reported liking each other better than those in the competitive arrangement (Deutsch, 1949b). Forest and Balcetis (2008) state that students working in teams have a better understanding of democratic principles, increased racial and cultural acceptance and a lower incidence of misbehavior and discipline problems. Roseth, Johnson and Johnson (2008) found that used correctly collaborative learning produces greater individual accountability and positive interdependence. Cooperative teamwork impacts not only student learning, it also improves self-esteem and relationships with other students (Gillies, 2008). Clearly, there are advantages, namely: improved social and academic skills. And while some classroom lessons may only be current for a brief period of time, the social skills and abilities learned by working in groups and teams lasts a lifetime and is increasingly important for employment.

Assessing Teamwork

Inherent in any method of instruction is the necessity of evaluation. Teachers working toward the goal of helping students acquire teamwork skills have simultaneously been hampered by a lack of suitable tools for assessment (Paris, Salas & Cannon-Bowers, 2000). Prevailing methods of team assessment are external, performed by the teacher and center on product only, ignoring the group process that has allowed the creation of the product. Hard workers are not recognized for their extra efforts, nor are slackers

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identified and as a result they receive undeserved credit. Both can undermine the effectiveness of group work. Group impressions of individual members are rarely considered, and peer feedback of strengths and weaknesses is lacking. Last but not least, team and individual learning needs go largely undetected making remediation difficult.

A step ahead of education some corporations such as Bank of America, Hewlett-Packard and Intel have already implemented group methods of evaluating the teamwork performance of individual employees. The most common method is referred to as 360- degree feedback. Similar to the 360 degree points of reference on a compass, the method relies on multiple perspectives to evaluate the performance of an individual. Co-workers within the team can provide multiple evaluative perspectives because they see each other frequently and can accurately identify one another's strengths and weaknesses. Many employees believe that the old-fashioned job review by only one person is no longer appropriate, and since it has been proven so favorable to productivity team assessment is also favored by management in business and industry (Evans & Wolf, 2005).

Even as adolescents need teamwork skills, psychologists and others have worked at developing classroom methods that teach these skills. Yet, there has been no effective method of evaluation of group skills and therefore a portion of learning has been denied. Hand in hand with the need to develop teamwork skills, students need to learn both peer and self-assessment. Later in life they will need

to fairly evaluate and critique co-workers and accurate self-assessment provides a basis for life-long learning (Gardner, 2004).

Any method of classroom evaluation of teams should not only assess the entire team's performance. It should also describe each individual team member's contributions within the group and influence on other members of the group. Evaluation should also assess observable teamwork making each individual responsible for their personal development and free individual students from accountability for the actions and behaviors of other group members (VanVugt, DeCremer & Janssen, 2007). Evaluation can no longer be left to solely to the teacher. They are not present at all times in each group, nor can they interpret how team members influence one another. Just as co-workers can more accurately assess the work and productivity of their colleagues, student team members are the best observers of what happens in their groups. Students must learn how to honestly evaluate the contributions of teammates and help one another detect learning needs. Gathering student perceptions also provides the teacher with insight into team and individual assets and deficiencies. This insight can then be used as the basis for further instruction and shaping appropriate intervention. Allowing students to share the responsibility of team appraisal conveys a sense of trust and respect and gives students the practice needed for growth and development (Gillies, 2007). These features are not present in the external methods of evaluation currently in use.

Productive teamwork also requires self-evaluation. This is more likely when students are allowed to practice giving feedback to teammates and in turn

receive feedback from team members. Peer feedback can verify or challenge an individual's self-perception and prompt change. Self-evaluation is critical to personal development. Knowing how to accurately assess one's performance and having a reasonable criteria to apply for self-assessment is important to development (Klaus, 2008). Many people find this a difficult skill to master but with practice most students can improve.

Just as in the group evaluations used by businesses, teamwork in the classroom should include evaluation of team members by team members. Team members have the advantage frequent exposure to each other. Therefore, they can provide perspectives not available to the teacher about members of their team. Students are also familiar with the work performance and the influence of individual team members. In addition, by aggregating multiple perceptions, greater reliability in evaluation is attained (Smith, 2008). The Teamwork Skills Inventory (TSI) by Strom and Strom (2010) allows for both accountability of individual effort and evaluation of each team member by every other team member and thus helps teachers view the group process from various perspectives. It also allows for self-evaluation.

The TSI in an anonymous online assessment tool in which students answer questions regarding observed behaviors of each teammate and then evaluate their own behaviors. The same evaluation instrument is applied for self-evaluation as well as for peer evaluation. The completed evaluation of performance compares the self-evaluation with the aggregate of peer evaluations. Individual students receive an appraisal from their peers that shows which areas of behavioral

weakness that need improvement as well as areas of behavioral strength and competency that should be continued. As no one is perfect, all students will have some areas that need improving and should have some areas of strength. The greatest value of any method of assessment is its ability to direct growth and improvement.

The best way to develop teamwork skills is through guided instruction and practice. Adolescents should have ample opportunity for both. Businesses search for entry-level employees with teamwork skills. Educators hope for academic achievement among their students. Parents want their children can get along well with family and friends. Teamwork and evaluation skills can help adolescents achieve these goals.

Chapter 3

METHODS AND PROCEDURES FOR IMPLEMENTATION

In this chapter the rationale and purposes of the Teamwork Skills

Inventory (TSI) are discussed and compared to traditional methods of teamwork

evaluation. Procedures for implementation are introduced. Curriculum models

are offered to orient students toward teamwork and evaluation. Interpretation of

results is discussed, particularly the Inflation Index and the analysis of student

profiles for use in setting goals is introduced.

TSI Rationale

Classroom assessment techniques should be developmentally appropriate,

allow for evaluation of the target behavior or skill, guide teachers in adjusting

instruction for future learning, and should not be overly complicated (Haugen,

1999). In the case of teamwork skills, evaluation should allow practice of

methods for peer and self-evaluation (Johnson & Johnson, 2003). Design of the

Teamwork Skills Inventory by Strom and Strom (2010) arises from the need for

appropriate methods of evaluation of individual teamwork skills and the internal

functioning of a group. This method of assessment is based on stages in

adolescent social and cognitive development and research that shows adolescents

learn best from tasks that involve social interaction and active involvement

(Buckingham & Willett, 2006; Okojie & Olinzock, 2006). The TSI measures

teamwork skills demonstrated and observed by peers in the team while also

providing practice in self-assessment methods. Both are forms of evaluation used

in business contexts. The targeted skills are easy to understand and expected of

every student. Results should guide teachers in future instruction and help students in their self-improvement efforts. Since the evaluations are performed online the TSI allows teens to work in the digital environment with which they are so familiar, provides teachers with immediate access to results from evaluations and all while maintaining anonymity among students.

Purpose of the TSI

The purpose of the TSI is establish individual accountability within the group and provides teachers with an easily understood record of each student's social skills. It helps teachers with the difficult task of identifying teamwork skills and behaviors demonstrated by individual members of a team. Specifics of the design rely on perceptions of team members to assess the social skills an individual has shown during repeated interactions. The feedback from the various teammates provides greater reliability in the assessment. Unlike assessment of the group product where individual effort cannot be detected, the TSI holds individuals responsible for their own development and contribution to the team but not for the behaviors of teammates. Students are more likely to become motivated when they know they will be judged on the basis of team skills they have demonstrated as well as their performance on tests.

The TSI requires also students to be a source of information on how peers contribute to the team effort. Team members can identify those who influence and help them and report the type of help given. In this way students are also able to credit hard workers for their contribution and identify slackers who fail to do their share of the work. The evaluation process provides students with a method to

learn from each other and help each other grow (Chu, 2005). Teachers learn more about the group dynamics and the progress or obstacles that each team has experienced.

A unique feature of the TSI is its ability to aid in self-assessment. Students are familiar with many types of assessment - teacher tests, school district tests, state tests and national tests - but many have never considered self-evaluation. Without a reliable measure, self-judgment performed by teens is usually either too harsh or too lenient. Teamwork provides ideal conditions for comparison of self-perception with that of one's peers. Guidance and practice is essential in learning effective self-evaluation. Being self-critical is an important part of performing well in a team. Through evaluation students affirm behaviors that are strengths to be continued, and also identify areas of weakness that need to be altered and changed. Self-assessment can guide students in the life-long quest to become the person they aspire to be.

Implementation of the TSI

Direct instruction and discussions have proven valuable for introducing teamwork skills. The process of implementing the TSI should include teacher instruction that guides students toward an understanding of the nature of teams and how success through teaming is defined. The TSI includes twenty-five skills that are expected of all students. These skills should be reviewed and discussed. For example, skill number one states "This peer shows acceptable attendance for team meetings" (Strom & Strom, 2010). A teacher might explain that during teamwork all team members are expected to be at team meetings

because when members are not there the group cannot function properly and those who are absent miss important information. These are principles that students should understand. Direct instruction and discussions help orient students to the need for learning both teamwork and evaluation skills. Aggregating the perceptions of multiple group members provides greater reliability in evaluation (Chen & Gardener, 2005). Group evaluations similar to the TSI are used in many workplaces. At Whole Foods, Inc. teams select employees and their own leaders based on performance within the team (Fishman, 1999).

Trusting Teens to Evaluate Fairly

Expressing trust that students can and will learn to evaluate fairly is another step in the process. Teacher trust is necessary for the development of students' assessment skills. Trust determines whether students are allowed to participate in peer and self-evaluation. Rarely have schools viewed students as trustworthy partners in the evaluation process. Students are not allowed to participate in development of school policies, evaluate the performance of teachers nor contribute perceptions about conditions of learning (Smith & Gouett, 2002). Most students have minimal input toward establishing their own academic goals. In some school settings, students are not given opportunity to work in teams; much less participate in self or peer evaluation. When deprived of decision-making responsibilities and opportunities it is difficult for teens to develop the skills they will need as adults when teachers are no longer present (Strom & Strom, 2002b).

Developing trust requires relinquishing control of some behaviors, and allowing practice of the desired behavior (Strom & Strom, 2007). The ability to perform a behavior well is directly related to the amount of practice. Gladwell (2006) proposes that it is was thousands of practice hours over many years that allowed the Beatles to become the legendary rock phenomena that made them super stars. Likewise, teens can only develop analytical abilities, decision-making and goal setting by practicing these skills. Teachers who continue to make decisions for and deprive students of opportunities to evaluate can never fully trust that their students have developed the ability to draw conclusions and make decisions. Listening to student's views, allowing them to make choices, set goals, work in teams and practice evaluation skills of self and peers are ways teacher's can show trust (Strom, Strom & Wing, 2008). Allowing adolescents to share the evaluation process also allows teachers to continue in their field of expertise and remain the source of judgment on group product and individual test results while providing students constructive opportunities to help each other and gain experience in behaviors expected by employers and needed for life-long growth (Smith, 2008).

Honest feedback from peers is necessary. Much like receiving grades, feedback is a form of criticism but it provides valuable information about what skills need improvement. How can one improve without knowing improvement is needed? Many students have received either inconsistent feedback or only positive feedback from parents. In teen social groups, feedback centers on whatever the group values, which may have little relativity for work or in real life

(Way, Gingold, Rotenberg & Kuriakose, 2005). Peer feedback on teamwork

behaviors can provide direction in goal setting. Skill weaknesses can be

identified suggesting changes for growth with further guidance and

practice. Feedback from peers may also identify behavioral competencies, and

support student confidence in continuing those behaviors. With practice,

appropriate expectations and the help of patient, persistent teachers, students are

capable of providing fair and accurate evaluations (Strom & Strom, 2009).

Curriculum Help for Teachers

Strom and Strom (2010) have devised a five-lesson curriculum for use

with the TSI. The lessons are intended to help students understand the definition

of team success, behaviors that are expected of everyone and conditions that

promote fair and accurate feedback. Altogether the lessons require about 85

minutes. Lesson progression is as follows:

Lesson One - teams select a name and discuss personal definitions of

success. Intended to help the group understand what others expect of themselves

and gain a basis for self-comparison.

Lesson Two - explain why students should play a role in the evaluation process.

Lesson Three - introduce the concepts of formative and summative assessment,

discuss priorities for teamwork skills, and identify specific skills parents or other

relatives can teach.

Lesson Four - identify famous heroes or celebrities that exemplify particular

teamwork skills, discuss factors that influence group success and skills sets they

have observed or not observed among their classmates.

Lesson Five - identification of potential problems students might have in evaluating themselves and others fairly, along with ways to overcome these obstacles.

Assigning specific roles to be performed within the group is another valuable means to making group work productive (Johnson & Johnson, 1993). At Intel all team members have specific roles to fulfill giving each member accountability and self-direction and maximizes group performance through the increased depth of information and expanded flow of ideas (C. M. Brown, 2010). Strom and Strom (2010) have developed a role definition guide for use with the TSI. It is known as CLEAR, an acronym for Cooperative Learning Exercises and Roles. The stated goals of this program are to help students take an active role in learning, make the collaborative process the focus of teamwork, provide the opportunity for every student to make a contribution, reduce boredom by differentiating group member roles and support evaluation by ensuring enough time for peer evaluation.

There are twelve separate roles that are flexible enough to allow teams to decide on allocation of tasks and allow for continuous contributions by each team member through accountability in their role. The specific duties of each role reduce the chance of one member exerting dominance over the group. Because each role contributes something to the group, individuals need to pay attention and listen while teammates report the results of their task/s. A Team member may be assigned an interview with outside sources such as a business owner or a grandparent who served in the Vietnam War. Another team member may be

assigned to find information on the Web, or call a friend in China to compare current weather conditions. This active method allows teammates to practice multi-tasking and expands the scope of learning as team members complete tasks and report back to the group. Use of this method can also expose students to generational and cultural opinions and differences. Roles should rotate among group members, so that rather than repeating a favorite role a student performs well, each team member has the opportunity to participate in each role several times. This not only provides practice at each role but it improves group interaction and function. Students are accountable for the completion of their task, and the group is guided by its purpose and the anticipated outcomes of each role. The method illustrates the need for teachers to make changes in what is expected of individual student and teams.

Assessment Anonymity

It is important to note that while teens may understand the value of honest and fair evaluations, they also want to build and maintain friendships and most fear that honest assessment of friends will put their social standing in jeopardy. Since it takes practice to learn these skills many students struggle even after lessons and discussions and the younger the student, the more likely they are to struggle (Strom & Strom, 2010). Because of anonymity, the TSI, which can alleviate peer pressure fears. Without disclosure of names, the TSI provides feedback only on the proportion of teammates who observed each of the 25 skills. The report is confidential and only shows percentages of teammates who observed the behavioral skill. Students need guidance to recognize that honest

responses help friends improve performance by identifying deficiencies. All students will have deficiencies in skill sets and the best way to improve is to identify those deficiencies. Developing team skills while in a classroom setting is easier than losing a job because of skill deficiencies.

Submitting Evaluations

Definitions of the 25 skills in the TSI are readily available online via a pop-up window. During an evaluation if the student-evaluator needs clarification of a skill statement, s/he can click on that particular skill statement line and a pop-up message box will appear that provides the correct definition. Definitions for all skills are available online for student access. For example, the definition for skill number one is:

> This peer shows acceptable attendance for team meetings. Cooperative learning team members depend on one another. Those with acceptable attendance are able to make a greater contribution to the group. Some benefits of good attendance in adulthood are keeping a job, getting raises, and being promoted (Strom & Strom, (2010).

Each student submits an evaluation for themselves as well as for every member of the group by determining which of the 25 skills each team member has consistently demonstrated. If a student evaluator credits any particular team member as having demonstrated 20 or more skills a pop-up appears which reads, "Are you sure? This is a very high rating." The reminder helps students reconsider inflated assessments that would prevent friends from learning how they might improve their behavior. After the reminder the evaluator decides whether to submit the high rating or reconsider. The reminder of a very high rating during

the evaluation is meant to encourage students to reflect on the veracity of such a high rating.

Inflation Rating Index

After all evaluations are complete the teacher receives individual profiles for each student. The individual profile provides the teacher with both peer and self-ratings and also lists the total number of inflated ratings (peers rated as having demonstrated 20 or more skills) applied to teammates by a particular student. In this way the individual profile helps teachers detect students who inflate ratings, the number of inflated ratings that may have been applied and whether the self-rating has also been inflated. The Inflation Index functions as an intervention tool by detecting students who need more guidance with authentic evaluation and can track progress as the student evaluator becomes more realistic in peer and self appraisal. To illustrate, Kendon's profile reads: Inflation Index 1:4. This indicates Kendon has rated one person on his four-member team as having demonstrated 20 or more skills. Cholla is on a six-member team. She rated five people including herself as showing 20 or more skills. Cholla's Inflation Index is 5:6. Conversely, if Cholla had assigned no one a rating of 20 skills, her Inflation Index would be 0:6. Kendon and Cholla may need help in evaluating fairly but Cholla has the greater need. She has identified five out of six teammates as having very high ratings on team skills. The Inflation Index helps teachers guide students by identifying needs and allows charting of progress made toward more authentic assessment.

Revenge Ratings

Revenge ratings are another type of dishonest assessment that can occur when students decide to give very poor ratings to team members they dislike. It is important to help students understand that revenge ratings are at best useless and could be harmful. If a student dislikes another team member s/he should recognize that only accurate ratings help that team member to improve. Revenge ratings may cause anger that can prevent attempts at improvement. It sometimes happens in teamwork that some team members fail to contribute to the team project, either from laziness or from falling behind. Sometimes, a very low rating is simply a reflection of that particular student's poor participation but in all cases accurate ratings are the best policy for crediting hard workers, detecting slackers and helping all students track progress and set goals for improvement.

Interpretation of Profile Results

Once team members have completed all peer and self-evaluations then a team member profile is compiled for each student. It is the profile that reveals peer observations of behaviors and skills and allows comparison of peer observation with the self-assessment. The profile report lists all 25 skills along with two columns. One column is the percentage number of teammates who observed the skill. The other column is the self-evaluation in which a checkmark indicates if the student believes s/he is performing a particular skill. A skill that peers observed 100% of the time would indicate that this skill is a behavioral strength and should be continued. Skills showing 20% - 80% are behaviors that need improvement. Obviously, a skill demonstrated only 20% of the time would

need more work to improve than a skill demonstrated 80% of the time. Skills that received a 0% rating from peers indicate a complete failure to demonstrate this behavioral skill. These are areas that need careful and deliberate consideration on how to make progress.

For example, a look at Zhou's assessment reveals that on skill number one (acceptable attendance at team meetings), 100% of teammates observed that Zhou did indeed have excellent attendance at team meetings. This skill should be continued. In the column next to skill number 10 (refers to reading materials during discussion), 80% of Zhou's peers observed this behavior. There is room for improvement but it may not require as much effort as skill number18 (thinks about ideas before reaching conclusions), because only 20% of Zhou's teammates report observing this behavior. This skill needs improvement and it may take a concerted effort to make the desired changes. But, for skill number 23 (keeps trying even when the task becomes hard), 0% of Zhou's teammates reported observing this behavior. Zhou failed to exhibit this skill. This is an area where deliberate thought and careful goal setting should be considered and implemented.

Student Interpretations of the Profile

Students should compare their self-evaluation with the composite evaluation of their teammates. By comparing both views of attitudes and skills demonstrated during group work students can identify personal strengths and weaknesses. In the self-evaluation column checkmarks indicate that the student believes s/he demonstrates a particular skill. Ratings of 100% in the peer column are compared with the checkmarks in the second column of self-evaluation. If

100% of peers observed a behavior and the self-evaluation column also has a checkmark then this team member sees him/herself as others do. Comparing items where 20-80% of peers reported that the student demonstrated a skill against checkmarks in the self-evaluation column should take into account the actual percentage. If 80% of peers observed a behavior and the student has a checkmark for this skill, s/he can have some confidence that this skill is reliably performed. However, sometimes self-perception differs from that of peers. For instance, if the self-evaluation has a checkmark and the peer column notes a 20% observation of this skill, then there is some disparity between how the student sees him/herself and the perception of others. Skills that show a 0% rating but also have a checkmark are areas where the student has credited him/herself with a skill that no one else observed. This is a warning that the student may not pay enough attention to the perceptions of others.

Goal Setting for Students

Self-evaluation includes making decisions that guide personal improvement. When a formative evaluation is performed mid-way through the group project students have time to make behavioral changes. The recommended strategy is for the student to select certain items that deserve greater effort, paying particular attention to the items that have lower peer percentages. Additionally, the 25 items are arranged in clusters. Each cluster has a title. For example, the first cluster titled "Attends to Teamwork" contains items one through five. These five items relate to attendance, tardiness, staying focused, fulfilling the team role and performing a share of the work. Often the entire cluster of skills will have

lower peer-rated percentages. This enables students set goals for improvement that focus on a particular cluster of items. In turn, goals guide efforts in progress and growth before the final summative evaluation.

A comparison of business evaluations and the TSI may be useful. Many businesses favor evaluation methods where the process is streamlined and meaningful. Managers and employees can agree upon goals and skills making it is easier to provide feedback on progress. When goals are clearly outlined, the process of evaluation benefits both the individual and the organization (C. M. Brown, 2010). The TSI provides these same benefits for teachers and students. It is similar to the evaluation processes used by industry and business. Skills are well defined and discussed before projects begin allowing teachers and students to know what is expected. It is a streamlined evaluation of both self and peers based on skills demonstrated during teamwork. The results remain confidential but by comparing self-evaluations with straightforward peer feedback, it can have far-reaching consequences as students use the feedback to form goals that help them adjust and strengthen weak behaviors. Time is allowed for practice of roles and behaviors and observation of teammates. Evaluation mid-way through the group process allows time for changes in behavior when needed. The evaluation also provides feedback that confirms strengths.

Learning to self-evaluate is the basis for continued growth and development throughout life. Recognizing a need for growth is the beginning of change and development. Benefits to the business sector might include preparing students for collaborative work and peer evaluation. Communities could benefit

from students who have better social skills that help maintain more stable relationships and make better citizens. Information derived from the evaluation benefits not only individual students and allows student to learn from each other but helps teachers plan for instruction and learn vicariously from students. Schools receive a form of record keeping and analysis of students' social competencies. The TSI is a not a complicated evaluation process but provides for multiple uses.

Chapter 4

BENEFITS AND OBSTACLES

Resultant data and analysis from the TSI can provide useful information for students, teachers and parents. In this chapter some of these benefits are described. In addition, the challenge of implementing new methods is discussed as well as some obstacles that teachers, schools and parents may encounter in their efforts to make changes.

Benefits of the TSI

Surveys from employers suggest that soft skills and attitudes are more important than they were in the past and in many cases more important than technical competencies. Soft skills are generic and key to effective performance across a variety of job categories. According to surveys, the top three skills desired by employers are communication skills, problem-solving abilities and teamwork skills (Lyles, 2010). The TSI helps students develop each of these skills. Communicating with teammates and solving problems that help the group succeed are the same skills students will use in future employment. Implementing teamwork in the classroom together with the TSI assessment will give students opportunity to practice both team and evaluation skills. Research has shown that practice of social skills afforded by teamwork and evaluation helps students transfer these skills from the classroom to life situations (Canton, 2006).

Student benefits

The TSI allows students the unique opportunity of seeing themselves as others see them. As previously reviewed, teen social groups do not allow for free

expression of skill deficiencies witnessed by associates (Epstein, 2007). Neither are families always successful in helping children gain social skills. Some parents are inconsistent in their discipline and guidance, others only provide negative views of behavior, and still others are accustomed to complimenting children for every small success (Rimm, 2005). These circumstances are not ideal for helping teens assess areas that need improvement. Use of the TSI can provide a fair and honest evaluation by multiple peers providing feedback on both competencies and deficiencies. The anonymity of the instrument allows for an element of candor that may not be present during group discussions nor essays in which students may fear recognition of handwriting. In particular, feedback about shortcomings during group work alerts students to behaviors that need improvement. This is a valuable opportunity for students to help and learn from one another and for self-improvement that is vastly different from the top-down evaluation of product provided by teachers (Sadler & Good, 2006). When used in combination with goal setting it provides a powerful tool for growth in social maturity and helps foster the type of personal evaluation needed for life-long development.

Teacher benefits

The TSI provides multiple benefits to teachers. Since the skills are grouped in clusters teachers have the option of choosing which skills are most important for their students. This flexibility makes the TSI useful in various situations. For example, some employers feel that being on time for work and being at work when scheduled are so important that employees are reprimanded or fired based on their performance of these skills. The first cluster of five skills

in the TSI relates to attendance, tardiness and focus on tasks. These are

particularly important skills as students not in attendance or tardy greatly effect

group progress. A teacher of younger students may choose to focus on a few

clusters of the more basic skills. A group of learning disabled students might

focus different skill clusters than a group of gifted students, who may need to

focus on leadership skills. College students should be ready to focus on and

evaluate peers using all the skills, but the TSI can accommodate each set of needs.

Features such as the Inflation Rating Index, discussed in chapter 3, help

teachers analyze data for instructional guidance. The Inflation Index specifically

identifies students who need more instruction and guidance in evaluating fairly

and accurately (Strom & Strom, 2010). However, just as analysis of an individual

profile can help the teacher structure guidance for a particular student, analysis of

group profiles helps teachers find learning needs with a particular group or team

(Thompson, Strom & Strom, 2010). Comparisons from team to team may, for

example, guide teachers in project selection. Comparing profiles of all members

on a particular team gives the teacher insight for the team as a whole; successes

and failures.

Data can also be analyzed from other perspectives. Analysis of specific

groups of students, such as the learning disabled or the gifted, reveals differences

that can effect group and project structure (Torrance, 2000). Studies of ethnic and

gender differences using the TSI have already shown that indeed certain groups

do perform differently on social skills and that each group has various needs

(Strom, Strom & Wing, 2008). Whether determining areas of weakness for

individuals, teams, particular groups or the entire class, the TSI provides teachers

with needed feedback that allows them to arrange classroom instruction to suit the

needs of their students. Teachers who have used the TSI believe it rates a child's

performance on team and social skills better than a letter grade (Strom & Strom,

2007). Social skills are learnable and each student should be given optimal

instruction for learning needs.

The TSI can help teachers monitor their own progress and abilities to

guide group instruction. Since most teachers are alone in the classroom and have

sole responsible for their students, they have few methods to evaluate their own

progress and performance. Analysis of student and team profiles throughout a

semester and over years could permit teachers to follow their own growth and be

more accountable to principles and schools districts. When teachers work in

teams, results from individual profiles can help colleagues work together to solve

problems and create better overall instruction (Slick, 2009; Wagenen & Hibbard,

1998). Educators attempt to effectively teach all students and the TSI gives them

a new method of evaluating their performance.

During parent-teacher conferences use of the TSI lets parents see their

child through the eyes of his/her peers. Some parents accuse teachers of biased

evaluations. Multiple evaluations from peers provide parents with information

about their son or daughter from various sources, not just from a teacher. The

multiplicity of sources supports reliability and validity. It also allows teachers

and parents to reconcile differences and unite their efforts in support of students.

(Strom, Strom & Wing, 2008).

Parent Benefits

Implementation of the TSI in classrooms can have a beneficial effect outside the classroom as well. Part of the procedure for implementation involves sending home survey questions that involve parent and teen in conversations about how parents use teamwork on the job. This opportunity for communication between parent and child can open up important lines of communication in the home and allow for reciprocal learning and improved relationships between parent and child. Parents can be a valuable resource for schools and families should be a source of learning for children. Working as a team may enable parents, teachers and schools to better prepare children for the future (Patrikakou, Weissberg, Redding & Wahlberg, 2005).

Often parents have more experience with teaming at work than do teachers. Many parents use teamwork skills at work each day, whereas most teachers work alone in their classroom. Teachers may have difficulty relating to the frustration students face while parents may easily empathize. Open communication between parent and teen about teaming and how it affects their work and home life not only helps adolescents understand the importance of social skills, it also provides both parties with an opportunity to spend time together. In our fast-paced technology driven society most teens spend far more time texting friends or gaming online during one day than they spend talking with parents all week. Psychologists are express concerned about the increasing amount of time adolescent spend in peer group contact. Adolescent peer groups promote a only a limited range of values and constant cyber contact may have

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little relation to family values and standards or preparation needed for real life. Transfer of important family values and developing life-long relationships requires time spent together (Easton & Allensworth, 2005). Non-traditional homework that includes parent-child conversations has the benefit of fostering communication. Increased communication and time spent together may help in value transference.

Obstacles to Implementation of the TSI

Many of the benefits offered by the TSI are unique. As beneficial as they may be, they will present challenges for teachers and schools. The problem is that change is usually difficult and generally met with resistance. Additionally, changing only one small part of the system without changing other parts will yield the least results. Change is a complex task that often requires substantial effort and the difficulty should never be underestimated. However, daunting as the task may be, the first step to progress is the recognition of the need to change. (Dunning, Heath & Suls, 2004).

Teacher Obstacles

Teachers may find it difficult to trust students enough to allow them to participate in the evaluation process. Teachers must recognize that students cannot learn what they do not practice and that depriving students of growth opportunities is contrary the theory and practice of teaching. This understanding may make teachers more willing to extend a modicum of trust.

When teachers share the evaluation process they open themselves to the opportunity of learning from their students. Students evaluation of groups and

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group processes provide insights into the teacher's own learning process. This type of evaluation can prove to be a challenge for teachers. But if willing to learn from their students and view them as source of learning and growth, teachers can provide valuable insights. Students are with the teacher daily, unlike colleagues or administrators who may visit infrequently. The student perspective is distinct from any other (Strom, Strom & Wing, 2008).

Preparation of the type of non-traditional homework assignments needed to include parents in the TSI evaluation process is not necessarily an easy task. Teachers may want to try new approaches but without training and support growth can be stunted or halted. Could teachers work together in their search for questions and types of assignments? Could students help in the preparation of this type of assignment? Schools may also find it valuable to include parent volunteers in this area. Non-traditional homework should be seen as an invaluable aid to communication between teachers, parents and students and well worth the effort required for its implementation (Strom & Strom, 2010).

School Obstacles

Currently, teamwork skills and social skills are not part of standardized testing and there has been no method for assessing these skills (Klaus, 2008). Therefore, some schools choose to ignore their development, clinging to the theory that schools are not responsible for teaching social skills. These schools should consider research showing that adolescent academic performance improves when collaborative teamwork is included in classrooms (Johnson & Johnson, 1993). Discipline is reduced, students get along better, tolerance of

ethnic and other differences improves, knowledge of subject matter increases and critical thinking improves (Forest & Balcetis, 2008).

There are many valuable benefits arising from cooperative learning. But many schools and districts have difficultly moving way from older, more comfortable methods of teaching, even when teachers make the effort. Yet, studies show that student-learning outcomes are better when teachers feel support from principals and districts (Strom & Strom, 2009). If districts provided teachers with greater training in collaborative methods, then grade records would reflect the improvement in academic skills and districts could see the value of change. If social skills became part of school evaluation and records, districts might possibly spend less time and money dealing with discipline and tolerance problems. This might be a risk worth taking because prevention is usually less expensive and easier than remediation.

Parent Obstacles

Sometimes parents support old familiar methods from their past experience. Some parents object to peer evaluation, supposing it is less accurate and acceptable than evaluation from teachers. Schools may also encounter difficulties when inviting parents to participate in non-traditional homework. This is a new realm for schools and for parents. There are parents who will not be interested in participating in their child's school assignments, and blame teacher's for their children's failures. Some parents will claim that teenagers should be independent and that they as parents cannot possibly be involved with the many classes a child has in high school. For all these reasons,

schools could see parent involvement as problematic. But past research has shown that schools and districts need to educate parents. Research is needed to understand ways to foster teamwork and cooperation between schools and parents (Igo, 2002; Waler, 1998).

As schools review these issues they might explore how parent education could be effected through workshops, school websites and letters sent home via students. Districts would need to sustain this education in an effort to involve parents in their child's growth. Our technology has changed the way we elect public officials, could our technology help us change the way we educate parents and children? Information gained from social assessment and its implications for instruction, academic improvement and societal benefit may help schools and parents catch the vision. But until states and school districts begin to educate parents, ask for their help in making and supporting changes in the schools and support changes with records that show improvement, it is likely that our schools will have only minimal success.

While change is hard and takes time, schools and parents must find ways to bridge the gap between individual learning of academic skills and the inclusion of teamwork and social skills. The information explosion has caused businesses to see the need for teamwork among professionals of various disciplines. It helps businesses to rapidly obtain as much relevant information as possible to solve complex problems. Teams can work in parallel to solve problems faster than a single worker or department. The challenges that schools face today are no less complex or challenging. A multidisciplinary teamwork approach should be used

in solving these problems. The global marketplace and our children's futures

require that educators, parents and teens work together and move in

unprecedented directions to accommodate the diverse and changing needs of the

future.

Chapter 5

IMPLICATIONS AND RECOMMENDATIONS

This chapter discusses the complementary function of the TSI to the cooperative learning approach. Proposals and suggestions are given for its extended use in schools, such as using data from the TSI for research in to find support for special programs, detect needs of specific groups of students, support faculty collaboration and provide direction for in-service training. The application of the TSI in student and teacher portfolios is also discussed. Providing new methods for parent/teacher partnerships and accountability for schools and districts are also proposed.

Cooperative Learning and the TSI

Characteristics of the cooperative learning approach involve groups of students working together toward understanding of subject matter through the completion of a common goal. The success of the group depends on individual learning and effort, not solely on the group's product. Successful group outcomes depend on the teacher's skill in structuring both groups and projects and guiding team instruction. Collaborative learning allows for mainstreaming and inclusion of children with special learning needs. It can enhance ethnic relations in schools, accommodate the increasing diversity in classrooms and improve student discipline through the proactive and positive results of teaming. Cooperative learning easily accommodates the use of various types of technology and media. Successful teamwork requires well-trained and well-prepared teachers, and extensive practice on the part of students. Student learning is not automatic

and depends on clear descriptions of team member roles, learning objectives and team goals. Team members must agree to work together toward the objective and all members must be accountable and responsible for the group outcome. A good team experience helps the teammates become interdependent and promotes positive social interaction, behaviors and attitudes (Roseth, Johnson & Johnson, 2003).

The design of the Teamwork Skills Inventory supports the goals of collaborative learning. It provides practice in peer and self-evaluation and in the process promotes better understanding of the group and its needs. When teams are highly functioning, they can accomplish not only the product-goal, they also learn subject matter, help each other learn and develop valuable social skills. The TSI clearly defines the specifics of teamwork skills and the expectation that students will practice and work on developing these skills, regardless of race, gender, or stage of development. In turn, evaluation reinforces the importance of teamwork skills by providing students with information about their demonstrated progress.

The teamwork skills are presented in an easy to understand framework and students can refer to the target skills at any time during the group process. Through evaluation, strengths can be identified for recognition and needs detected for further instruction and remediation. Specific profile information allows teachers to select and integrate specific skills into group structures and lessons. Comparing self and peer-assessment on skill performance

supports understanding of learning needs and strengths. This information aids

students in setting goals.

Anonymity in reporting observations and receiving feedback relieves teens

of social pressure. Mid-project feedback allows time for peers to observe

teammates' behavior and provides for adjustments to behavior before final

assessment. Various evaluations from peers within the team promotes assessment

reliability. Working in teams is appropriate to adolescent stages of cognitive and

social development. Records developed from TSI evaluations can provide

valuable information for schools, parents and districts (Strom and Strom, 2009).

Recommendations for Implementation in Secondary Schools and Colleges

A natural extension of evaluation is collection and storage of data. Record

keeping has always been an essential part of how schools monitor student

progress in academic subjects and should be applied to the development of social

and team skills as well. The TSI is a new approach to evaluation of teamwork

skills and its benefits can best be realized by implementing new methods of

record keeping and use of the collected data in research. What follows are

suggested uses for the TSI profile information (Strom & Strom, 2010).

Student Portfolios

The TSI lends itself to the use of portfolios. A portfolio is a collection of

works that aids students in monitoring academic progress. In the process students

begin to develop responsibility for their own growth and development. Students

can track accomplishments and detect skills where more work is

needed. Tracking personal weaknesses may prompt a student to seek tutorial

help. Record keeping is an essential part of monitoring progress and is particularly useful when applied to the development of the social skills needed for teamwork. However, unlike an artist's portfolio, a student portfolio should not be used for self-promotion. When used for this purpose, it would not include identification of personal limitations and would therefore limit potential for personal growth. Over time, the TSI affords views of the self through the eyes of many and varied peers and across subject matters.

Student portfolios could also help schools identify students who need tutoring but have not recognized it themselves or are embarrassed to request help. Studies have shown that students who need help are not necessarily the ones who request it (Strom & Strom, 2007). Schools could use TSI records to match students who need help with student mentors who have both the academic skills and the social skills to help with tutoring. In the same way, older students might be matched as mentors for younger students who might need guidance or friendship.

Scores from the TSI can also help objectify the awards process. Awards are often granted to students based on grades or subjective information from teachers. TSI scores can help faculty identify students who help others and are an influence for good. Awards for leadership skills in high school are often selected from the student council or sports teams, but with the TSI teachers have an additional method of selecting students who have had a positive influence.

Faculty Collaboration

Student social development is the only area of competence that faculty teachers have in common. Per semester most students usually have 5 or 6 different teachers, therefore the entire faculty teaching them should know the progress of their social development. Just as teachers might check individual progress in academic subjects by looking at grade reports, teachers should have access to records of social skills. At the beginning of a school year teachers would have immediate access to the needs of incoming students. Instruction could be addressing needs of students earlier in the semester. Teachers would not need to re-discover learning needs each year. When student TSI profiles are placed in individual student portfolios, stored online or in the school office for teachers to examine, any one of a child's teachers can gain detailed insight about a particular student's social development. Student profiles can reveal strengths or weaknesses specific to a certain subject or may show that they generalize across course work. Some students will have high grades but low TSI scores or vice versa. Record keeping helps the faculty unite efforts and monitor the progress of specific individuals.

When students have failing grades teachers are informed. Schools could help teachers by alerting them to students who have low TSI scores. Sometimes teachers can spot students who need help with social skills but information from low TSI scores for incoming students would help teachers in their efforts to effectively reach every student. Teachers and students alike would be safer. Learning increases when teachers and students have the social skills to

make the classroom a pleasant and workable environment (Brigman & Webb, 2007).

In-Service Education

In-service education is meant to help teachers maintain or increase competency and become aware of innovations in methodology. Most schools have implemented some form of cooperative learning methods in their curriculum. Using the TSI as a means of evaluating student progress also affords school administrators with information about the learning needs of the faculty. TSI results may reveal common interests that indicate a need for in-service instruction among the faculty. School administrators should also ask teachers to identify TSI items that they want to know more about and arrange training to address these needs of the faculty. (Strom, Strom, Wing & Becket, 2008).

Providing Opportunities for Parent-School Partnerships

The TSI provides schools concrete methods of involving parents in adolescent education. Some parents excuse themselves from a guidance role, preferring to spend time with children in pleasant activities, not in disciplining. Others find it difficult to become acquainted and work with the variety of teachers teens have in high school. However, in field-tests of the TSI, 80% of teachers reported that parents should join in the efforts to teach teamwork and social skills to their teens. For example, teachers believed the skills of attendance and tardiness were highly influenced by parents. In contrast, only 39% of adolescents thought that parents should help them acquire teamwork

skills. The TSI presents schools with the opportunity to use non-traditional homework discussions that are structured to help parents and teens communicate. Discussions about the importance of teaming and social skills are of benefit to all parties involved. Viewed from another perspective, it allows teaming in many variations as: schools or teachers partnering with parents, parents teaming with adolescents, and adolescents teaming with teachers and parents. This layering of teams resembles the matrix teaming used in some businesses. It provides for parallel progress that could allow students to learn from the experience and failures of past generations and other members of society as well as each other and their teachers. Additionally, it provides opportunities for schools and teachers to learn from student observations.

Data for Institutional Research

Educational institutions in middle and high school should have methods of gathering data that allows them to detect needs of students and identify accomplishments. They also need to know if established programs are fulfilling the stated goals and meeting the needs of specific populations, such as students with disabilities and the gifted and talented students.   Data from longitudinal and concurrent studies help schools track the changes and growth over time and assess immediate needs of students or particular groups or classes. The TSI can be a powerful gauge of how well programs attain their goals through the eyes of the students they are intended to benefit. The following two examples refer to Special Education and Gifted or Talented Programs.

Special Education

An Individual Education Plan (IEP) only provides the program of study for an individual student. However, part of the goal for special education is the inclusion of learning disabled and handicapped students into the regular classroom. The TSI can provide the perspective of those whom these programs are intended to benefit giving schools needed information about how well these programs actually work. For example, are students with learning disabilities gaining the teamwork skills they are expected to learn from inclusion classrooms? Are there skills that disabled students gain readily or which appear to be more difficult for them to gain as opposed to students not in special education? How do special education students see themselves in contrast with the way non-disabled students see them? By compiling group profiles for the learning disabled, the physically handicapped, and the mentally challenged a faculty can determine whether predicted progress on social skills is matching the demonstrated abilities or failing in the view of special education students and their non-disabled peers. TSI profiles can also reveal how special education students view the acceptance and support received from team members and classmates.

Gifted and Talented Programs

Students with exceptional abilities also benefit from assessment of competence in cooperative learning settings. Often it is assumed that "gifted" students have few special needs. This same lack of respect for differences has frequently plagued disabled students. Statistical analysis highlights the tragic underfunding of gifted and talented programs within American schools. Nearly

20% of dropouts are considered talented and gifted. This percentage is disproportionate to their representation in the general public (Runco, 2006). It is a serious deficiency to ignore the needs of the most talented and gifted members of society. Studies of reciprocal learning methods often report that gifted students are ineffective tutors because they are bossy and lack patience with those who struggle to learn concepts. Torrance (2000) reported that many gifted students admitted they lacked skill in working with others and in groups. His study targeted the deficiencies and by the end of the program many students showed improvement, demonstrating more confidence and becoming more effective leaders. Use of specific items in the TSI can provide insight into the skills or lack thereof for this group of individuals. Educators should consider how gifted or talented students are perceived by others, and what teamwork skills they demonstrate more or less often than their peers. Often accelerated classes focus solely on acquisition of more advanced material but these courses might be broadened to include a leadership element in which the gifted have opportunity to practice teamwork and social skills. These questions and issues can be addressed by comparing profile scores from talented students with the outcomes on regular student profiles.

Gender Differences

Findings in a study by Strom and Strom (2002) presented interesting gender comparisons in collaborative skills. Female students more often assigned themselves higher scores than their male counterparts. However, it appears their self-assessments were correct because when evaluated by all the members of their

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groups female students received more favorable reviews than male group members. There are some implications of this study that are applicable to secondary education. The first is that heterogeneous mixtures in groups are important. It is easier to learn social skills when some members of the group already possess the skills and can model the desired behaviors. A second application is that since teachers are the main source of recommendations for leadership opportunities and awards, TSI outcomes can be used as a more reliable source of demonstrated leadership skills that when systematic observation of students is unavailable. If the only definitions for leadership are social and physical dominance, girls will be under-represented in leadership capacities. Leadership is not a genetic trait. It is a competency that all students can learn. Those who possess good team skills are also better able to follow and support when it is their turn to do so. A team-oriented society needs many capable leaders as members shift between various roles.

Teacher Portfolios

Teacher development is supported by the information derived from portfolios. Student portfolios show districts that teachers are monitoring team skills and are able to identify those skills that require extra attention (Peterson, 2004). Portfolios also allow teachers to record their personal efforts in teaching team skills and helping specific students, such as documenting consultations with students, especially those with greater needs. Teachers can describe cooperative initiatives with faculty colleagues and the results of these initiatives in the

portfolio, showing a commitment to support cooperative learning methods in their work.

In some school districts teacher pay is related to outcomes on standardized test scores. Some believe this causes teachers to be more accountable for their work. But others believe this forces teachers to only teach what is on the exam. Teacher portfolios can provide another criteria for teacher recognition and merit pay. Merit might be based on evidence of collaboration with faculty colleagues and other professionals as shown through record keeping not just short classroom visits from administrators or torpedo-style evaluations from students at the end of the year.

School Accountability

When teachers receive minimal training in the collaborative learning method, they are bound to struggle with implementation. As an example, in a recent conversation with a friend who teaches high school physics, he stated that he includes "group work as often as he can" but noted minimal support from the administration. During his college career he had no training in collaborative teaching methods and has received only a few hours of in-service training for this method. To make matters worse, his students are resistant. They complain group work slows them down and puts their grades at risk. These complaints are not uncommon among high school students and teachers.

A recent campaign slogan for district superintendent of the school district in which I live is, "Accountability and Back to Basics". For 60 sixty years research has supported the effectiveness of collaborative learning methods. For

decades now business and industry have clamored for employees that possess the needed skills to work in teams and leadership positions. But yet schools districts continue to assert that classrooms should go back to basics. Should we go back to the old drop out rates, state and national test scores, ethnic intolerance, discipline problems, and lack of creative and critical thinking? When scores on state and national achievement exams fall, school curriculums often eliminate non-basic, non-essential programs such as music, sports, and theatre. However, these same activities help young brains acquire multiple structures and provide mental health benefits (Strom & Strom, 2009). Change is difficult and change to large systems is even more difficult. But, can we really expect that continuing to teach in the same old methods will provide students with new and better results?

The old methods may have been appropriate in a previous era; before the information age, global economic competition and when change was slower. However, times have changed and so have the social and cultural conditions in which our children and adolescents are developing. Research has shown that new methods can change results. Student learning and achievement can improve and, it can improve for all students when they work together. The campaign slogan did have one thing right; it is time for schools and districts to show greater accountability. When businesses have methods that do not work, they change. They must change or they disappear. American schools can no longer disregard the needs of social and team development and the methods needed to evaluate these processes. When schools begin to teach and account for these skills, parents and students will be able to count on districts with schools

that provide both a high-quality academic education and also nourish skills for teamwork, lifelong learning, and social adjustment. Maybe the campaign slogan should be, "Accountability: Out with the Old and In with the New".

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