COLLABORATIVE TEACHING: A ROAD MAP TO SUCCESSFUL INCLUSION

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Introduction

A merger of regular and special education is, commonly, termed as *inclusive education* (Wade & Zone, 2000). According to Wade and Zone, the philosophy of inclusive education is underpinned by the concept that *all* students should have opportunity to be educated in same school despite of their individual differences of culture, ethnicity, language, religion, and health. This, also, refers to the idea that inclusive education is a system of remedial education for reducing the risks, of marginalization and exclusion of children with special needs, associated with special needs education (Florian, 2008). According to Acedo (2008), the philosophy of inclusive education is deep rooted in the phenomenon of *education for all (*EFA). It is such a system which not only benefits special population but also serves as a guiding principle to build a diverse society that is more justice and democratic in nature. Acedo further asserted that inclusive education is a promising mechanism for providing high-quality education to all students with and without special needs because it focuses on the presence, achievement, and participation of all the children. This implies that inclusion rejects exclusion of children in any context. It encourages every child to be the part of a mainstream school and it also helps extending boundaries of EFA because it is a continuous process (Acedo, 2008). Halinen and Jarvinen (2008) also supported the argument that inclusive education benefits all the diverse learners because inclusion not only means to provide equal high-quality educational opportunities to children with and without needs but it also

implies to deploy identical and equal strategies and procedures to assure successful learning for children with and without special needs. All the above facts indicate that giving respect, value and acceptance to difference is core theme of Inclusion (Carrington & Valeo, 2003). This implies that Inclusive education is a system of education which provides prospects to dissimilar groups of children to study in a collaborative and positive environment. Diversity of learners and maintenance of quality education for *all* students are the focal points of an inclusive environment. The role of schools in providing quality teaching for diverse learners becomes crucial when schools are facilitating students with inclusive education environment (Wade & Zone, 2000). One of the most appropriate approaches to undertake and manage inclusive education is *collaborative teaching* or *co-teaching* because it provides an opportunity to the students with special needs to get access to the mainstream schools, regular educators, and general curriculum (Magiera, Smith, Zigmond, & Gebauer, 2005) while accommodating children with special needs in accordance with their pertinent *individualized educational program* (IEP) (Millward, Baynes, Dyson, Riddell, Banks, Kane, & Wilson, 2002).

 The main purpose of this literature review is to highlight the significance of co-teaching in the context of creating and managing effective inclusive classrooms. So, the scope of this paper will mainly encompass the rationale for collaborative teaching, impact of team teaching on different stakeholders of inclusive education, critical analysis of various models of collaborative teaching, different strategies adopted by the co-teachers during co-teaching, dilemmas of co-teaching, role of school administration, and some helpful suggestions to evaluate and improve co-teaching in an inclusive classroom. Role of

school administrator and role of technology in the execution of collaborative teaching will also be discussed. What is the situation of collaborative teaching in Pakistan will also be the point of concern in the literature review.

Rationale for co-teaching in the context of inclusion

Inclusive educational practices emphasize on the integration of children with disabilities in the mainstream schools and more specifically regular classrooms with a commitment of providing sense of belonging and acceptance (Voltz, Brazil, & Ford, 2001) but it has been evidenced that sometimes inclusion does work for children with disabilities and sometimes it fosters uncertain circumstances for administration, teachers and students with and without disabilities. One of the core reasons why some schools cannot implement inclusion in its true spirit is the degree of collaboration among the teachers. Contemporary practices and literature indicate that co-ordination of special educator with the staff of general education schools is becoming inevitable in many ways (Ludlow, 2011). Educating special children in regular classroom cannot be done by a general educator only. There might be certain issues related to a particular disability which a general educator may not understand to handle. Therefore, collaboration between a regular teacher and a special educator is essential for educating children with special needs in a regular classroom (Keefe, Moore, & Duff, 2004) and thus pairing of general teachers with special educators becomes unavoidable (Welch, 2000). Snell and Janney (2005) also supported this argument that for a successful and effective *inclusion,* collaborative teaching plays a vital role because the primary underlying principle of co-teaching is to provide a supportive environment to students with diverse learning needs to fulfill their academic as well social needs. Snell and Janney are of the

view that collaborative teaching avoids segregation of students with special needs and provides scaffolding for including students with distinct learning needs into the regular classroom. Moreover, cooperative teaching assists to promote a sense of ownership and membership among the pupils because the stigma of being excluded is eliminated. It clearly draws one's attention to the fact that co-teaching is a tool that can create a conducive and encouraging learning environment for student with special needs. They do not need to be pulled out of the classrooms for accommodation of their diverse needs because all the required essentials are being provided within a single inclusive classroom with the cooperation of co-teachers.

The philosophy of collaboration revolves around the effective and efficient interaction of people for attainment of a common goal (Welch, 2000). In the context of collaboration among special and general educators, if the teachers do not know how to communicate and cooperate with each other in order to make education accessible, for children with special needs, in an inclusive classroom then mere pairing of diverse teachers will happen and may not yield the desired outcome. Alliance of general and special educators in an inclusive classroom will work if they put efforts together with a sense of sharing the responsibility because according to Welch (2000), the core ideology of collaboration lies in concepts like common goals, conformity to spend efforts to assemble resources, capacity building of participants in terms of high morale and consistency, problem solving nature of communication, and contribution of every member in diagnoses and rectification of problems which special children might encounter while being included in a general classroom. All these crucial features of collaboration prove to be the basic advocates of paring general educators with regular

teachers in such a way that they should have a shared responsibility of fostering

learning capabilities of special children beyond the special and excluded classroom

environment. Welch (2000) identified *shared responsibility* as a key factor contributor to

the success of collaboration which is quite thought provoking for me because the sense

of accountability and interdependency stretches the boundaries for ideas and resources

required to better fit a special child in an inclusive classroom and this will lead the two

major parties of collaboration to work effectively and they will be able to pool most of the

resources required for enhancing inclusive educational practices. They will be in a

better position to combine all the concrete as well abstract reserves to better serve the

educational and psychological needs of special children. The philosophy of

collaboration is not just confined to that of meager interaction and this philosophical

differentiation has been made clear by Donato (2004). In his review of a research he

stood by the stance that collaborative activities have more wide range of impact on the

environment as a whole as compared to interaction. So, when general and special

educators will join hands together for collaboration and not only for interaction, they

might create strong association with mutual advantages for all the stakeholders of an

inclusive classroom including both types of educators and students with and without

diverse learning needs.

Another vigorous philosophy scaffolding the need of pairing general educators with

special educators is *diversity of resources.* Hansen (2007) gave a comprehensive

elaboration on the infusion of special educators in mainstream classrooms. He stood by

the stance that opposes exclusion of special educators from the mainstream schools

but the most highlighting impression that his work left is that paring special educators

with general teachers may assist in pooling effective and diverse resources. Resources become diverse in such kind of collaboration because both the collaborators come from diverse fields of training and experience. Pedagogical strategies, content correlation and handling children without disabilities are the core values of training and experience of general educators while special educators are supposed to be expert on classroom-management and differentiated instructional practices. Magiera, Smith, Zigmond, and Gebauer (2005) supported this argument of pooling resources from two diverse field and stated that co-teaching may emerge to be the most convincing merger of special and regular education because the general educator is more expert in content area and knows nothing or less about how to meet the needs of children with special needs while the special educator has his excellence in handling individual learning demands of diverse learners. So the integration of special educators in general classrooms means to bring two different disciplines together and serve the diverse learning needs with diverse resources.

Models of Co-Teaching

Co-teaching are the instructional strategies used by the co-teachers which are adopted by keeping in mind the learning needs of diverse students, space, goal and objectives of the lesson, and number of the students (Friend & Cook, 2010). Snell and Janney (2005) identified six basic co-instructional models for inclusive classrooms. The models are:

1. One teach, one observe

2. One teach, one assist

3. Station Teaching

4. Parallel Teaching

5. Alternate Teaching

6. Team Teaching

One Teach, One Observe Model

In this model one teacher, usually, the general educator performs the role of lead teacher and takes the responsibility of delivering the content of the topic. On the other hand, the other co-teacher performs the duty of an observer and records data which may assist the co-teachers to plan next lesson. For example, the observer teacher may circulate around the class, during the lesson, and observe various behaviors of the diverse learners and may plan for appropriate accommodations for the upcoming lecture.

This model seems better in the sense that one teacher observes for the diverse learning needs of the individuals while other is delivering the lesson, but it may not work effectively because the role of special educator (the observer) is limited to observations only. This may become a cause of conflict between the co-teachers. Moreover, this model treats all the students a single group and in a larger group it is usually difficult to assess whether everyone is receiving the same attention of the teacher or not.

One Teach, One Assist Model

This model works on the same pattern of *one teach one observe* model but with a slight difference. Instead of gathering data through observations, the special educator assumes the role of support teacher. The support teacher provides assistance to

students while the lead teacher is delivering the content. Support may be required in re-explaining the task to individuals or small groups, dealing with behavior problems, responding questions, or clarifying directions to students. Underuse of special educator's skills is, once again, the major drawback of this model and special educator may feel unvalued while working in this model.

Station Teaching

In station teaching the co-teachers plan their work/content/lesson with mutual planning unlike the previous two models but both the teachers teach separately on different work stations with in the class.   Students rotate, under supervision or independently, across the co-teachers and both the teachers deliver content to the students.

The benefit of this model is that the capabilities of the special educator are not underutilized and both the teachers perform an active teaching in the class (Conderman, 2011). One if the crucial challenge associated with this model may be of pacing the students on different stations (Rice & Zigmond, 2000). Moreover, classroom management will also become challenging when students with diverse learning needs will be allowed to work independently on stations.

Parallel Teaching

Class is divided into two heterogeneous groups under this teaching model and same content is delivered to both groups by the same teacher on alternate turns. Snell and Janney acclaimed that the co-teachers have to be vigilant while forming the groups and

should consider that students with special needs or diverse learning must not be grouped always in the same group. The co-teachers should be rotated around.

The strength of this model is that co-teachers plan the lesson with mutual consent and synchronize information with each other. Moreover, when both the teachers are playing active roles in the class, their morale and excitement will be high to perform at their best (Conderman, 2011). But the teachers to face a more demanding situation of classroom management because the noise level in parallel teacher may increase (Vaughn, Schumm, & Arguelles, 1997).

Alternate Teaching

According to Condeman (2011), this teaching model is suitable for the children who have been the victims of school or classroom truancy and, therefore, need pre-teaching, re-teaching, or reviews from one of the teachers while the lead teacher is delivering the content. Snell and Janney (2005) recommend that the co-teachers should alternate their roles and group composition of students while utilizing this model because this activity will avoid the occurrence of *role conflict*.

Rice and Zigmond (2000) discussed the strengths and challenges related to the model and stated that the model is robust in providing equal opportunity to the co-teachers to maintain same status. Moreover, all the students benefit from the small group exercises held in the class but the challenge is appropriate formation of groups. Teachers have to consider that groups must not always select the same students every time.

Team Teaching

Gurgur and Uzuner (2011) described *team* teaching as a model adopted by the co-teachers where both the teachers plan and teach the content on the same time in front of a single group. Teachers may adopt different strategies to impart knowledge, for example, they may dramatize the content, may arrange debate on the topic to be delivered, or may demonstrate the content through physical aids (Snell & Janney, 2005). The co-teachers may exchange their mutual roles and should have pre-planned for this shift of roles because otherwise, conflict may arise and students may get disturbed.

The strength of this model is that the co-teachers are equally responsible for content delivery and thus one may not consider him or her more superior or inferior to the other (Gurgur & Uzuner, 2011). But the challenge associated with the model is of crucial nature because when both the teachers are leading the class, a high degree of commitment and more time for planning is required (Vaughn, Schumm, & Arguelles, 1997).

Various Teacher to Teacher Collaboration models like Leader and Teacher-Observer Dyad, Two Teachers- Divided Class, Team Teaching and Varying Co-Teaching Models have been suggested by educationists (Walker, Scherry, Gransbery, 2001). These authors have elaborated the mentioned models in detail and the one which, being a teacher to special children, found comparatively prevailing is *teacher-observer dyad.* This model provides opportunities to both educators for applying their knowledge and expertise. At one time general teacher may work as lead teacher while special teacher

being observer circulates around the students to assist them for their difficulties. At other time roles can be reordered thus giving special educator a chance to deliver instructions on the topic they are proficient on. In this model class management skills are essential for both educators so they have to equip themselves with content knowledge and class management skills at the same time.

Strategies helpful for Co-teachers

Co-teachers may apply variety of strategies while teaching an inclusive class. Among all other strategies, the most appealing and most appropriate strategies I found are:

- Cooperative Learning
- Peer Tutoring

Cooperative Learning

Cooperative learning is an instructional technique which produces effective results when used as an intervention for learners with diverse learning needs (Gillies, 2006). The major reason for cooperative learning to be more effective may be because peer-bonding appears to be stronger as compared to teacher-student relationship and children tend to be more expressive to their peer (Seifert, 2005). This implies that a peer may be more known to the academic and social problems/needs of a child requiring intervention.

Reading is one of the two basic skills that need particular attention from the first phase of primary education. If students are identified with problems in this area, teachers should look for student-centered instructional interventions that encourage active

students' participation. Co-operative learning can serve the purpose best in classroom setting where students can master the particular area while cooperating, helping, and respecting each other (Durukan, 2011). Doymus (2007) also supported cooperative learning techniques for testing and prevailing problems and finding positive solutions in classroom settings. Gillies (2006) advocated cooperative learning as a teaching-learning technique that satisfies the educational and social needs of students with and without diverse learning needs. She further asserted that cooperative learning benefits both parties, that is, students and teachers because sometime peer are more aware of the problems faced by a friend. So while working in a group they may help teacher in understanding needs of a particular child and in this way teacher may be able to plan for an effective solution or intervention without consuming much time. Shaaban (2006) emphasized the importance of CL by refereeing to the fact that CL is theoretically relevant to the acquisition of language because maximum opportunities for a purposeful classroom in a positively supportive environment is the core characteristic of CL. CL provides an opportunity to the learners to work as small-group and strive for the achievement of a common goal while utilizing everyone's expertise (Faryadi, 2007). This implies that CL is a learner-centered approach allowing diversity of opinion to be integrated for the solution of a common problem or completion of a mutual task. Moreover, in this learning-centered environment students learn together and improve critical thinking by sharing views over a specific area.

Principles of CL

According to Johnson, Johnson, and Holubec (1998), the reason why CL performs more

effectively as compared to other instructional strategies is rooted in five essential

elements/principles. They described these five components as:

- Positive Interdependence
- Individual accountability
- Face-to-Face Promotive Interaction
- Interpersonal and Small Group Skills
- Group Processing

The above discussion yields that if due considerations are given to the mentioned

components and teachers supervise the group for following these principles,

cooperative learning can produce positive and effective results for academic as well as

social needs of all the students with and without diverse needs.

Peer Tutoring

Peer tutoring is a pedagogical strategy that engages two students, for the sake of

learning activity, to teacher one another (Ginsburg-Block & Lee, 2005). It has been

considered as an operative and successful approach for catering the needs of student

with disabilities in an inclusive classroom (Scruggs & Mastropieri, 2012). Thus, it is

another effective strategy that can enhance the effectiveness of co-teaching and this

can make inclusive practices more functioning with respect to high achievements in

content areas and other social skills (Mastropieri, Scruggs, Graetz, Norland, Gardizi, &

McDuffie, 2005).

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Ginsburg-Block and Lee (2005) reported that this instructional strategy is one of the most appropriate strategies to instruct a diverse range of students in inclusive classrooms. The mentioned authors have done a comprehensive work in investigating the effects of different peer tutoring models and found out that this strategy helps students to be involved with an active approach instead of the passive approach of a teacher-led class. They further acclaimed that peer-tutoring has multifaceted capitalizations and it serves in many dimensions including improved academic skills, self-concept, interdependency, and driving force to perform and participate. Mcduffie, Mastropieri, and Scruggs (2009) found in their study, of 203 7th-grade students with and without special needs, that students involved in peer-tutoring under the umbrella of co-teaching performed far better than the teacher-led class.

Peer tutoring is a strategy that scaffolds co-teachers to get a better understanding of the individual learning needs, of students with and without special needs, through the peers (Mastropieri & Scruggs, 2007). It has been evidenced that in co-taught class where peer-tutoring is deployed, students interact more with their peer as compared to communicating with teachers (Ginsburg-Block & Lee, 2005). Thus when there is more interaction between students, they may be well acquainted with their learning needs and this may, significantly, assist the co-teachers to plan their further suitable activities while keeping individual learning needs in their minds (Mastropieri et al., 2005). How peer-tutoring works in an inclusive classroom can be better understood with the help of models of peer tutoring discussed below.

Models of Peer-Tutoring

Literature evidenced two most commonly adopted models of peer tutoring.

1. Reciprocal Peer Tutoring

2. Classwide Peer Tutoring

Reciprocal Peer Tutoring (RPT)

RPT is a peer tutoring model in which students are paired for learning purpose and they are supposed to alternate their mutual roles of tutor and tutee for a set of activities (Ginsburg-Block, 2005). Ginsburg-Block is of the view that RPT can be most effectively used in elementary levels, specifically for the students having learning difficulties in the subject of mathematics.

Mickelson, Yetter, Lemberger, Hovater, and Ayers (2003) explained the structure and scheme of reciprocal peer tutoring. According to these authors, RPT is a formalized and structured technique in which both the members of the dyad own the responsibility of their roles about deciding the content and development of appropriate multiple choice questions. After this, peers administer each other for the performance of their roles and finally mark each other for their performance. The peers switch over their mutual roles once the *one time* activity is over and get ready for the next activity with exchanged roles. This gives them an opportunity to be benefitted by each other's abilities.

Class Wide Peer Tutoring (CWPT)

CWPT is another strategy of peer tutoring dividing whole class into two competitive teams and learning game is structured between both the teams (U.S. Department of

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Education, 2010). Report by the U.S. department of education further elaborated and indicated that in CWPT technique pairs are made within each team and roles of tutor and tutee are assigned in each pair. Then a task is given to each pair and is marked after its completion. After this, roles of tutor and tutee are exchanged within each session for the new task and game finishes on aggregating marks of every team. The co-teachers are responsible for deciding about which content is to be used. In order to measure the effects of CWPT, teachers prepare structured tests for the unit used in peer tutoring session and evaluate the performance on the basis of pre-tests and post tests (Maheady & Gard, 2010).

The benefits of CWPT technique are documented in the context of direct and indirect learning benefits (Scruggs & Mastrpieri, 2012). Scruggs and Mastropieri conducted a study on secondary schools, in which they deployed CWPT model and probed that CWPT helped students to not only master the targeted content but a visible improvement was observed in the non targeted content areas as well. Maheady and Gard (2010) supported this argument by adding that CWPT program has multidimensional direct and indirect positive impacts on the academics and social life of the students with and without special needs because it keeps the pupils engaged, most productively, in an activity for every session. Therefore, students learn to use their learnt strategies, in a specific content area for mastering the other areas as well.

Dilemmas of Co-teaching

Although the literature above has revealed the effectiveness of collaborative in the context of inclusive classrooms and has also provided empirical evidences of the

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positive impacts of co-teaching on the academic as well as social life of the students with diverse needs. The implementation of collaborative teaching is not simple to capitalize; rather schools encounter several philosophical, pragmatic, and administrative dilemmas while implementing collaborative teaching (Kruse & Louis, 1997). Some of the crucial barriers to execution of collaborative teaching, identified by the literature (Cahill & Mitra, 2008; Trent, 1998) are:

- Identity formation

- Time constraint

- Lack of training

- Lack of comprehension towards co-teaching models

- Non supportive administration

- Burnout Problem

Need of time is to gain a clear understanding of how the above factors can hamper the planning and execution of collaborative teaching. Therefore, a description of the above mentioned elements is provided below.

Role of School Administrator

As the field of education is progressing with the passage of time and contemporary concepts are making education more meaningful as compared to the past, multifaceted challenges are also emerging. One of the emerging challenges faced by the education sector is to provide the most facilitating inclusive education to the students with and without special needs (Friend & Cook, 2010). In order to meet this challenge of providing a nurtured inclusive education system, the role of an administrator becomes more crucial because providing inclusive education by capitalizing collaborative

teaching is not confined to mere pairing of two teachers from diverse fields (Wilson, 2005). The school administrators posit such a leadership position that is required to commit with other staff members to provide necessary learning opportunities and environment to the student with and without diverse learning needs (Friend & Cook, 2010). This implies that the role of the school administrator occupies a significant position for success and failure of inclusion and co-teaching.

Probing into the role-demand of the school administrator, in the context of collaborative teaching, an administrator is required to focus on various aspects. According to Dove and Honigsfeld (2010), the school administrator is responsible for planning, arranging, and organizing sources for collaboration in accordance with the special needs of the school. In this regard, it is essential for the school principal to provide time to the collaborating staff to discuss the challenges and the possible solutions to the prevailing issues of collaborative teaching or an inclusive classroom. Moreover, Dove and Honigsfeld elaborated, the arrangement and supply of the required material for a co-taught should also be the responsibility of the administrator because if the co-teachers are to arrange the educational material, it will consume a major part of the time and less time will be left with the teachers to plan, implement, and evaluate their co-teaching model. The significance of the role of an administrator in co-teaching is more precisely elaborated by Garrison-Wade, Sobel, and Fulmer (2007). They argued that a successful principal can execute a successful inclusive model and for a principal to be successful, it is necessary that he should be able to:

- Communicate administrative support and leadership

- Select capable and agreed partners for co-teaching

- Provide professional development opportunities on continual basis

- Establish balanced and appropriate ratio of students with special needs in a co-taught class

- Provide flexible scheduling to the participants, of collaborative teaching, for co-planning

- Develop and assess appropriate IEPs

- Collaboratively develop the philosophies of co-teaching

- Communicate obvious policies about the discipline issues

- Exhibit abilities in collecting information and problem-solving

- Observing and evaluating the co-teaching teams

It may be easily elicited from the points mentioned by Garrison-Wade, Sobel, and Fulmer that the role of an administrator encompasses a wide range of issues related to collaborative teaching and the co-teachers may not be able to implement and exercise the practice of collaborative teaching without the administrative support.

Friend (2008) found in a study about collaborative teaching that, most often, the co-teachers complaint about the non-supportive attitude of the principal. Moreover, they identified such a non-supportive behavior as an indicator for the failure of collaborative teaching. The reason behind the non-supportive behavior of the school administrator might be lack of knowledge and training about the issues related to inclusive education, special education, and collaborative teaching (Friend & Cook, 2010). Therefore, the need for capacity building should not only be confined to the preparation of the

collaborative teachers, rather the school principals should also undergo intense

professional development programs related to inclusion and collaborative education

(Garrison-Wade, Sobel, & Fulmer, 2007).

Evaluating the Co-teaching Teams

From the literature elaborated above, it is self-explanatory that co-teaching impacts the

academic and social life of children with and without special needs in a very positive

and progressive way. But after implementing collaborative or cooperative teaching

models in the inclusive classroom, it would be unjust to presume that the co-teachers

are teaching effectively and they are fulfilling the diverse needs of the diverse learners

in a very appropriate manner (Salend, Gordon, & Lopez-Vona, 2002). Therefore, the

need for a robust reflective system to project the true picture of experiences of the co-

teachers is inevitable (Salend, 2001). The existence of such an insightful system will

allow the administrator and the co-teachers as well to analyze and evaluate their

planning, pedagogical practices, and assessment strategies in an inclusive classroom.

According to Salend (2001), in the context of evaluating the co-teaching teams, the

purpose of evaluation may take different positions. For example, the evaluation is

necessary to know about:

- The proper execution of the co-teachers' roles

- The proper integration and execution of the instructional strategies and models of
  co-teaching

- The proper practice of appropriate assessment of students' achievements

Snell and Janney (2005) also advocated for the significance of a comprehensive evaluation procedure of the co-teaching practice. Snell and Janney argued that evaluation is necessary because it provides an impression to the co-teachers about their work. It enables the co-teachers to analyze their interpersonal effectiveness. Snell and Janney further elaborated that a comprehensive evaluation should be included in the schedule of the school practices as a regular yearly exercise because it helps the co-teachers to assess the change occurred in the academic achievements, behavior, attitudes, friendships, social skills, and referrals. Simmons and Magiera (2007) highlighted the need for evaluation process in a way that it helps the partner teachers to know about how truly they are co-teaching and it also assists them to make necessary modifications in case if problems arise between the co-teachers or the co-teaching becomes vulnerable to any internal or external risk.

In order to evaluate the performance of the co-teaching teams, data is essential to be gathered and the task of gathering data can be completed with the collaboration of the co-teachers, students, and the parents (Snell & Janney, 2005). According to Wischnowski, Salmon, and Eaton (2004), information about the experience of collaborative teaching can be gathered from parents, students, teachers, and other staff members by capitalizing the following techniques:

- **General discussion** with students, teachers, and parents asking about their experience of co-teaching

- **Interviews** (Unstructured, semi-structures, structured)

- **Surveys**

- **Self-rating**

- **Best practice check-lists**

- **Observations**

- **School records** (comparison of records before and after implementation of co-teaching)

The authenticity of all the above mentioned information techniques is well established in the literature (Creswel, 2012), therefore, the data collected through the techniques may be utilized to analyze the impacts and effectiveness of the co-teaching practice in the context of academic as well social life of the students with and without diverse learning needs. The work done by Wischnowski, Salmon, and Eaton (2004), in the context of evaluating co-teaching, is appreciable. They employed various methods in order to gather information about the co-teaching practices prevailing in a rural district of New York. A specimen of evaluating a specific area of co-teaching along with the proposed method of evaluation is being presented from the work of the mentioned researchers.

Evaluation Area	Method
Information about co-teachers training	Professional development review
Co-teaching method applied in the class	Observations
Effects of the model on students	Comparison of test results
Accommodations requirement	IEP review
Classroom rules	Teacher interviews/ documents
Compliance of classroom rules	Observations

Table 1. Evaluation areas and proposed methods

Similar type of questions can be posited by the evaluators to obtain a comprehensive

knowledge about the effectiveness of co-teaching and on the basis of the information

collected through these methods; certain positive changes can be integrated in the

process of collaborative teaching. These positive changes will be strengthen the

scaffolding of inclusive education and will enhance the effectiveness of cooperative

teaching which in turn will help the school to provide a congenial learning environment

to the children with diverse learning needs. Therefore, school principals should facilitate

the co-teachers to utilize various techniques of gathering information and take decisions

for the modification or revision of their plans, strategies and goals.

Improving Co-teaching

It may be elicited from the literature above that collaborative teaching serves as a *tool* to

execute inclusive education programs in an appropriate manner. Some issues related to

the planning and implementation of collaborative teaching has already been discussed

in the previous sections and, now, the consideration is on the possibilities to resolve the

dilemmas associated with collaborative teaching and to analyze some certain areas

essential to improve for improving co-teaching practices in the inclusive classrooms.

The exercise of co-teaching may be improved by focusing on the following dynamics:

- o Intensive Capacity Building

- o Integration of Technology

- o Improving communication between the partners

Integration of Technology

The absolute significance of technology in the field of education has already achieved

worldwide recognition. Starcic (2010) mentioned that previously the usage of technology

in schools was related with only the *technology teacher*. That is, the teacher who led the

class for most of the time was expected to provide every content-knowledge other than

computer or technological skills. But, now in the present era, situation has been

changed with the emergence of inclusion. In a co-taught class both the teachers are

supposed to possess a comprehensive knowledge about the technology being used

inside the class for the betterment of the diverse learners. This may be perceived as an

addition to the burdens of co-teachers but an appropriate embedding of suitable

technology inside an inclusive class is expected to become the prerequisite of a co-

taught class (Scherer, 2004).

Mason (2008) described the *use of technology* as a powerful tool enhancing the

command and strength of the collaborating teachers. He refers technology as a *third*

teacher in a co-taught inclusive classroom. Mason suggested the integration of

technology in a co-taught class in the following possible manners:

- A small number of designated computers in the class

- Multimedia presentations

- Smart boards

- Electronic white boards

- Individual laptops or computers for students in the class

- Hand-held technologies, such as, ipads, ipods, or cell phones

- Electronic books

- Mobile technology carts that move around as and when required

- Educational software

- Specific educational websites designed to improve reading, writing, and problem-solving skills of the children with and without special needs

Kim, Woodruff, Klein, and Vaughn (2007) also supported the idea of integrating technology in co-taught classrooms and argued that the responsible co-teaching is not merely affiliated with the *placement.* Rather it also depends significantly on the way instructions are being provided to the class. Kim, Woodruff, Klein, and Vaughn conducted a study to investigate the effects of technology and computer based programs on literacy learning of the children with learning disabilities. These LD children were placed and taught in an inclusive classroom taught by two teachers. The co-teachers were provided with the technological assistance of software called *computer-assisted collaborative strategic reading (CACSR).* The findings of the study confirmed that the practice of collaborative teaching was highly facilitated, with the help of technology, in multi-dimensions and it also assisted the co-teachers in maximizing the benefits of collaborative teaching while overcoming the barriers encountered during teaching students with LD. CACSR helped the co-teachers in the following avenues:

- It enabled the co-teachers to preplan their instructional strategies and set goals based on individual needs

- It assisted the teachers for delivering the content knowledge on critical reading to the students with LD

- It allowed the partner teachers to evaluate the effects of responsible co-teaching on students with and without LD

The implications of the above discussion on integration of technology are quite obvious in terms of effective and responsible co-teaching. It may deduced from the above findings that in order to execute a co-teaching model in an inclusive classroom, the presence of technological assistance is inevitable because it not only helps the co-teachers to reduce the barriers and obstacles related to co-teaching but also enhances the capacity building of the partners and amplifies the range of benefits from collaborative teaming.

Besides *technology,* a term *assistive technology* posits significant place in education of children with special needs. Assistive technology (AT) is termed as a service or device that directly assists a child who is suffering from any kind of disability (McLaren, Bausch, & Ault, 2007). The services provided under the umbrella of AT may include variety of therapies and interventions to improve the living, learning, and social skills of the children with special needs (Scherer, 2004). McLaren, Bausch, and Ault (2007) mentioned in their work that every child who is on an IEP is obvious to obtain AT within his natural settings. Therefore, the schools that are providing inclusive education and are capitalizing collaborative teaching need to be considerate for professionally preparing their co-teachers for embedding technology and AT in their classrooms because technology has emerged as one of the significant factors that made inclusion and collaborative teaching possible (Mason, 2008).

Conclusion

Inclusion of children with disabilities is emerging as a contemporary issue under the umbrella of *education for all* because it provides equal chance to *all* children to study in a mutual setting instead of segregating some of the students to special schools, classroom or units. Although educators support the concept of inclusion of special students into regular schools but pragmatically these educators feel reluctant to practice it. One of the possible reasons is that inclusion may fail to produce required results because the ordinary teachers do not possess expertise required to deal with children with special needs. Their qualification, professional trainings, and professional experience do not support them to manage a diverse range of students. This deficiency calls for presence of a *special educator* in the classroom who is well versed with educational and emotional needs of special children. The special educator will cooperate with ordinary teacher to maintain a congenial environment inside the classroom and also will assist regular teacher to deal with children having special needs. This cooperation may be labeled as *Co-teaching* or *collaborative teaching.* Co-teaching has significant positive impacts on the diversity of students and it has been empirically proven that students learning under the cooperation of two diverse teachers achieved far better than the students who have been taught in exclusive and segregated environment. Co-teaching influences not only children with special needs but children without special needs also perform well under the models of collaborative teaching. The varied range of students does not only achieve academically but *co-teaching* also pushes them to learn how to well behave socially and how to cooperate each other on different tasks. It helps students with and without special needs to

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develop good problem-solving skills, communication skills, and decision making skills. It promotes acceptance towards diversity among students as well as teachers.

Co-teaching is not free of barriers and problems. Any model of co-teaching cannot be implemented successfully if some constraints are not being tackled vigilantly. One of the crucial dilemmas of co-teaching is *personality clash* of co-teachers. If the paired teachers are not able to synchronize and cooperate with each other, co-teaching may have even negative impacts on the classroom and students' performance may get worse in every aspect. Other problem that may become a hurdle to co-teaching is weaker administrative behavior. If the principal is not active in supervising the collaborative team, results may be drastically damaging. School headmaster is the authority which can reinforce co-teachers to collaborate properly and accelerate positive outcomes. The mere implementation of cooperative teaching does not ensure effective outcomes. Rather, the model needs to be evaluated on regular bases, so that, the process of co-teaching may undergo progressive development while escalating the possibility of positive academic as well as social consequences for the children with and without special needs. In order to promote inclusion through collaborative teaching, administration may perform well with the collaboration of govt. polices. Govt. authorities should chalk out inclusion based educational policies which support integration of assistive technology within the inclusive classrooms and should also develop intensive capacity building programs for co-teachers so that they may be technically and professionally equipped to deal with a diverse range of children.

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