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INSTRUMENTAL ENRICHMENT AS A VEHICLE FOR TEACHERS IN IMPLEMENTING OUTCOMES BASED EDUCATION IN SOUTH AFRICA

Mervyn Skuy
Sandra Young
Achmat Ajam
Peter Fridjhon
University of the Witwatersrand
and
Lilian Lomofsky
University of the Western Cape

The new political dispensation in South Africa has replaced the content-oriented, rote-learning based curriculum of the previous regime with an Outcomes Based Education (OBE) approach. OBE is compatible with the developments in cognitive education in general, and with Feuerstein's Instrumental Enrichment (IE) thinking skills programme in particular. Accordingly, this study investigated the effectiveness of involving teachers in an IE programme in improving their ability to implement OBE in their schools. Eighteen teachers from four schools catering for historically disadvantaged black students participated in the programme over a period of eighteen months (58 school weeks). Teachers were trained in the application of the IE programme itself, and in the infusion of its cognitive principles and strategies in their subject content and goals. Findings suggested the usefulness of an IE-based programme in providing teachers with the appropriate attitudes and skills for implementing the Outcomes Based Education approach with students who have special educational needs.

Consonant with its *apartheid* policy, education under the previous regime in South Africa emphasised compliance, conformity and passive absorption of information. To a large extent, school curricula reflected the perspective of the South Africa minority group in

power and the imposition of its educational and cultural ideals. Moreover, the black South African majority (constituting over 80% of the population) was sociopolitically and educationally disadvantaged and disempowered.

In 1994, with the first democratic South African election, the policy of apartheid was dismantled, and the transformation of the society had formally begun. As part of the far-reaching political, social and economic changes aimed at an egalitarian and viable, healthy society, the new political dispensation has replaced the previous education policy with a constructivist, Outcomes Based Education (OBE) approach.

Based on the OBE curriculum originating in the USA and developed in other countries (e.g. Schwartz and Cavener, 1994; Spady, 1994) the *Outcomes* in OBE refer to the knowledge, skills, values and/or attitudes that an individual is expected to demonstrate in a given learning situation at the end of each learning process. OBE focuses on the processes necessary for learners to achieve these outcomes. The transformational OBE has, as its guiding vision, the production of self-directed learners with the ability to solve problems. The new system, in contrast to the traditional curriculum, develops the teacher's capacity to respond to diversity in student's needs and learning rates, and is designed to meet special needs. The system is based on the belief that all children can learn successfully. Learners are actively involved in their own learning, and flexibility of teaching style and content is stressed. Thus, the interactional nature of teaching is central to the approach.

Among the goals for both teachers and students is that they become analytical and creative thinkers, problem solvers and communicators, who can gather and organise information and conduct research. Thus, the teacher's role changes from being a transmitter of knowledge to a mediator and facilitator of learning, while the expectation for the student changes from a passive receiver of knowledge to an autonomous learner, reflective thinker and problem solver, who is actively involved in his/her own learning and construction of knowledge.

Instead of encouraging learners to conform, their individuality is respected, creativity is encouraged and self-concept is enhanced. Cross-curricular teaching is emphasised, and various subjects are integrated. The aim is to prepare students for the information age and technologically oriented society; and learning is viewed as holistic and takes into account the total person, by promoting his/her physical, social, emotional cognitive and spiritual development and well being.

In other countries, for example the USA (Spady, 1994) OBE is adopted by those school districts which opt for it and who determine their own outcomes. In contrast to this, OBE has been declared national policy in South Africa. The intention is to gradually phase in the approach, referred to as *Curriculum 2005*, over the seven years from 1999-2005. However, on the face of this, the South African authorities have acknowledged that the

country's teachers are inadequately prepared for the implementation of OBE (Cape Times, 1998). Moreover, in the light of the previous oppressive and sterile education system, the question arises of whether the teachers who have lived and been trained under the system themselves necessarily have the cognitive tools for higher order (metacognitive) thinking, let alone for implementing a curriculum which develops their students' thinking ability.

From the viewpoint of directions in psychological theory, OBE is compatible with the *cognitive* approach to education, in terms of which the provision of approaches for the development of systematic ways of thinking and problem solving are central (Haywood, 1990; Samuels and Price, 1992). *Cognitive education* stresses cognitive and social modifiability, metacognition and the education of intellectual and other processes. These approaches and goals are seen as relevant to *all* learners, including those with special needs. Feuerstein's (1979) theory of *structural cognitive modifiability*, and the thinking skills programme of *Instrumental Enrichment (IE)* derived from it, epitomise and are central to the philosophy of cognitive education.

The IE programme comprises fourteen paper and pencil instruments, each of which focuses on a different cognitive operation. Each Instrument comprises a range of exercises which serve to enhance cognitive functions and to create insight. The Instruments are designed for maximal intensic motivation, and serve as a vehicle for the implementation of the criteria and principles of *mediated learning experience* (Feuerstein, 1979).

IE can be used as a vehicle to empower teachers to become active listeners as a first and necessary step to enabling them to transform their students into active learners. This structured and systematic programme aims at fostering autonomous learning and thinking ability and the enhancement of cognitive and metacognitive functions. Central to this programme is Feuerstein's construct of *mediated learning experience (MLE)* which not only provides an explanation of the conditions under which optimal learning occurs, but also specifies the dimensions of the teacher-student interaction required for optimal cognitive and socioemotional learning (Feuerstein, 1979; Feuerstein and Feuerstein 1991; Skuy, 1997).

The IE programme and its underlying construct of MLE provide teachers with the ability to develop a mediational, interactive style of teaching which promotes higher levels of thinking, reasoning and communication amongst students (Silverman and Waxman, 1988). The mediator can foster the development of reflective learning in a student by modelling planning behaviour, and directing him/her to set his/her own learning objectives, which will facilitate the achievement of specified outcomes.

Moreover, IE is a cognitive and metacognitive programme where the concepts or *cognitive operations* from the Instruments are *bridged* into all subjects/learning areas, and which provides a cognitive foundation for teachers and students who will be exposed to OBE.

The *bridging* component of IE helps to facilitate the integration of different subject matter around a common principle. Again, as a relatively *content free* programme which emphasises process, IE serves to model the provision of opportunities for students to contribute diverse content from their own experiences, and encourages flexibility in terms of learning style and curricular goals.

Considerable research has been conducted on IE, and Burden (1990) draws attention to the existence of over 300 studies which document various positive aspects of the programme, and concludes that, despite the various justifiable criticisms, *the cumulative, large scale evidence is irrefutable* (p.83). More recent studies of IE have increasingly addressed themselves to various issues and variables considered by Burden to have been neglected (e.g. Howie, Richards and Pirihi, 1993; Skuy, Mentis, Durbach, Cockcroft, Fridjhon and Mentis, 1995; Tzuriel and Alfassi, 1994). A study by Kozulin, Kaufman and Lurie (1997) found that IE was effective for Ethiopian immigrants in Israel, and that changes in their cognitive and school performance were obtained, depending upon an interaction between the following factors: the level of support for IE intervention provided by the school; the level of initial cognitive performance; the quality of teacher mediation; and the systematic application of the IE programme.

These findings support those of studies done in South Africa, which have yielded success under various conditions using different models of IE intervention in combination with other approaches; (Skuy, Mentis, Nkwe and Arnott, 1990; Skuy et al., 1995; Skuy, Goldstein, Mentis and Fridjhon, 1997). The latter study by Skuy et al. (1998) demonstrated that the mediation of certain cognitive operations and exercises from the IE programme, in conjunction with the implementation of Hoopes' (1979) model of crosscultural development and multicultural education, resulted in an enhanced interest in contact with other cultures, a decrease in stereotyping of others and a feasible basis for a cognitive-developmental approach to intercultural coexistence.

Again, in the study by Skuy et al. (1995), the provision of IE for primary school students, combined with the concurrent provision to their teachers of training in MLE and of curriculum packages embodying IE concepts, was effective in improving the cognitive functioning and creativity of different cultural groups, particularly the most deprived, African group. This last finding was consistent with the view expressed by Adams (1989) that *for markedly below average students IE is uniquely appropriate and effective* (p.75).

Among the studies which have been conducted on IE in South Africa, are those which have documented its positive effects on teachers and their education. In one such study (Skuy, Lomofsky, Green and Fridjhon, 1993) pre-service teachers from a disadvantaged community who had an IE-based programme incorporated into their training, demonstrated significant improvements, compared to a control group, in cognitive functioning and reading comprehension, self confidence and lesson planning ability.

In the light of the concordance of Feuerstein's theory and approach with the goals of OBE, and taking cognisance of the positive findings obtained with the IE programme in South Africa and elsewhere, this study aimed to develop IE and MLE as a vehicle for the effective implementation, within the South African education system, of the OBE approach. Accordingly, this study documents the design and implementation of an IE training and intervention programme for teachers, with explicit links to the implementation of OBE in the classroom. This study also evaluated the responses and responsiveness of teachers to this approach.

Further, since the adoption of OBE is based inter alia on its perceived ability to cater to all students, including those with special needs, it is important that teachers' belief systems reflect this. Since Instrumental Enrichment and the theory upon which it is based fosters a belief in the modifiability of all learners, an improvement in teacher's attitudes to weaker students was expected.

Method

Sample

The study was conducted in the greater Cape Town area where the majority of the population (about 54%) are people of mixed race who were officially classified as *Coloured* by the apartheid regime. Considering that this population group comprises only about 10% of the South African population, this reflects a significant concentration of the *coloured* community (about 40% of its total). The *Coloured* community, created by apartheid structures in the country, was severely sociopolitically and economically disadvantaged. The four schools in this community initially included in the project thus had student populations of largely low socio-economic status.

The fifth school originally included in the project was representative of the historically sociopolitically disadvantaged, oppressed, low socio-economic status African majority. This school is situated in a township originally set aside for and thus inhabited almost totally by Africans. While the African population comprises about 70% of the total South African population, it constitutes only about 19% of the greater Cape Town area.

The project was affected by the general upheaval in the South African school system, which had particularly disruptive influence on certain of the schools in the original sample, resulting in principal and teacher retrenchments and redeployments. Thus the full programme and study were completed in only three of the original four *Coloured* schools, as well as in the African school. Moreover, Many of the teachers who were trained either resigned or were retrenched before the project was completed.

Of the original 37 teachers from the five schools who were trained in Instrumental Enrichment (IE), 18 continued in the project, four at *Coloured* school A, five at school B, three at school C and six at the African school (D). The teachers at schools A,B & C were themselves *Coloured*, while the teachers at school D were themselves African. (This is the

situation in African and *Coloured* schools generally).

Twelve of the eighteen teachers were in possession of a teacher's diploma, while six had postgraduate teaching qualifications. Ten had taught for more than ten years, three for between six and ten years and five for between one and six years. All were elementary school teachers, teaching within the range of Grades 1-7.

The twelve teachers from the historically *Coloured* schools were proficient in both English and Afrikaans. The latter is the Dutch-derived language spoken by most *Coloured* people in South Africa (in common with the formerly dominant sector of the white minority), and was thus the medium of instruction at these schools. The six teachers from the African school spoke Xhosa (one of the official South African languages) as well as English. As is the case in African schools generally, the language of instruction in the lower grades (Grades 1-3) was the vernacular, and in the higher grades, English.

Procedure

Five schools, representative of their respective communities, were approached and given presentations regarding the relevance of cognitive education to the planned national implementation of the OBE curriculum. At a combined meeting of the teachers and school principals each of the schools opted to be part of the project and were included in all decision making regarding the basis for the implementation of the project in their respective schools. The overall procedure adopted was as follows:

An Instrumental Enrichment training workshop was attended by each of the five school principals and teachers from primary grades 1-7 of each school. The school principals were included in an effort to ensure that appropriate leadership and motivation were provided for the teachers and their implementation of the project in each of the schools.

The IE training workshop was spread out over a period of three months. There was an initial one day introduction during a school vacation, and thereafter the participants attended training sessions weekly after school hours in order to complete the 40 required hours for accreditation. This culminated in a final session for lesson presentations and a certification ceremony. Seven of the fourteen IE instruments (namely, Organisation of Dots, Comparisons, Orientation in Space, Categorisation, Analytic Perception, Family Relations and Illustrations), were presented during the course of the three month training period.

During the workshops, many opportunities were provided for the teachers to bridge the concepts and principles from the pages of the Instruments of the IE programme into their own personal and social contexts as well as into school subjects. This gave them a foundation upon which to develop critical and creative thinking and problem solving skills which are compatible with the anticipated outcomes for the national curriculum. Metacognition was also emphasised in making the participants aware of their own

cognitive processing and of how to develop metacognitive and self-regulated thinking in their own students' mediated learning.

Further, due to historic racial separation of state schools, the workshop afforded teachers who had cultural and linguistic differences, the opportunity to work together, to share classroom experiences and lesson planning.

Following the initial three months (12 week) training period, IE was implemented for the rest of that academic year (for three terms or 21 weeks) and for most of the following academic year (a further 25 weeks). Within the constraints of school timetables and practical difficulties, teachers attempted to implement the programme as a systematic, structured and integral part of the timetable in Grades 1-7 at each of the schools which continued in the project.

Two IE periods per week were generally allocated for each class during school hours. Further, the cognitive principles and concepts learned during the IE lessons were bridged and infused into all subject teaching lessons. The teachers adopted a mediational teaching style in teaching IE lessons as well as regular class teaching.

Two accredited IE trainers met weekly with the group of participating teachers at each school to provide ongoing input and support. These sessions focussed on reviewing important principals from each Instrument, and modelling lessons for the teachers' lesson planning and bridging which they could apply to their own students. The supervisors also observed and monitored lessons in the classroom, and provided feedback and reflection on the implementation by the teachers. This programme of intervention for the teachers is further elaborated in the section below.

Programme of Intervention

The intervention programme enabled the teachers to serve both as the targets and the agents of change. Thus, the teachers were assisted in improving their own cognitive functioning and use of strategies, while at the same time being provided with and made competent in a model of cognitive education for their students.

The intervention was provided for the teachers in two stages. The direct approach was implemented in the first three months, when the trainers mediated cognitive operations and strategies to teachers by means of the Instruments of the IE programme. Once the strategy was identified, there was directed application of the cognitive operation and skill in as many subject domains as possible. This step (Step 1) consisted of developing a thinking skill *in isolation* by means of IE, followed by the application of that skill in a selected context. The mediator/trainer still managed the learning process at this stage, ensuring that the new knowledge was in place and that both the skill and application thereof in a specific situation was being mastered.

Step 2 involved the *cognitive apprenticeship* (Rogoff, 1990). Once the pre-knowledge had been established, the mediator embarked upon a careful process of apprenticeship with the teachers, providing a scaffold for the new skills, allowing the process to become strong and then removing the scaffold until the teachers could apply the thinking skill autonomously. This process consisted of the following steps:

1. Modelling and verbalising the required behaviour/implementing the thinking skills in a structured sequence;
2. Initiating the required behaviour, then continuing on the learner's suggestions, monitoring and mediating all along;
3. Initiating the required behaviour and expecting the learner to complete the task;
4. Posing a problem that requires the practiced thinking skill(s) and allowing the learner to solve it unassisted, while verbalising the process. If the learner had explored all avenues and was still unsuccessful, the mediator could guide the process;
5. Repeating the above procedure in a group with peer tutoring and intervention; Once this process was completed for all the required skills, the scaffold was removed completely. The mediator no longer intervened, and the tasks were no longer selected and grouped according to the strategies required, but were tackled as and when the subject material was prescribed.

At that stage the underlying thinking skills were internalized and the learner would have developed the procedural knowledge to be able to control the task and organize the problem solving process.

Thus, after the teachers had received the initial training in IE, ongoing supervision and support were provided to achieve the following goals:

1. To ensure that the IE programme was effectively run in the classroom.
2. To enable teachers to identify the thinking skills required to complete a given task.
3. To enable teachers to modify existing subject material so that this material would provide opportunities for the development of various thinking skills.

During the weekly training sessions, the *scaffolding* phase was carried out. IE lessons were modelled and their objectives were clearly identified. Teachers were expected to present these lessons to their respective classes during the one week period before the next weekly workshop. Then, during the following workshop, the outcome (objective) of the previous IE lesson was applied within the other subjects' domains. This was aimed at preparing teachers to adapt existing resources by being able to identify the cognitive principles to be used in performing a task. Teachers had to bring examples of the material that they were using in class. The trainer/mediator would discuss the content with teachers, and possible approaches to bridge and apply the cognitive outcome of the IE lesson would be explored, thus using existing materials but modifying the approach to suit the cognitive focus.

During the second half of the programme, the intensity and frequency of mediation was withdrawn and sessions were held weekly, with teachers being expected to contribute an increasing amount of the application of cognitive principles in their subject domain, and to illustrate the modification of subjects domains to meet cognitive goals.

Measures

1. Attitudes towards the Characteristics of Less Academic Pupils *Scale* (Blagg, 1991).

Using this scale, Blagg (1991) found that, after training in and implementation of IE, teachers were significantly more optimistic about certain characteristics of low achievers than a matched group of control teachers. Before, and again after the training/intervention, teachers in this study were given a modified version of the Scale.

The Scale comprises 18 pairs of statements each separated by seven positions along a continuum. For each item, there is a negative statement about academically less able students at one side of the continuum and, at the other side, a positive statement. The respondent selects a position along the continuum for each item/pair of statements, reflecting his/her attitude. In each case, a score of zero to six is awarded, depending on the position along the scale that the respondent ticked. The closer to the positive pole the response, the higher the score.

2. Teacher Feedback Questionnaire.

After the period of intervention, teachers were asked to individually and anonymously complete a Feedback Questionnaire. The questionnaire comprised eight open-ended questions in which the teachers were asked to indicate, respectively, their perceptions of the strengths, weaknesses, opportunities for learning, difficulties and shortcomings of the IE programme and its implementation. They were also asked to provide explicit comments on the opportunities for learning and application afforded by the IE programme, as well as to specify the principles and concepts from the Instruments that they applied in teaching their subjects. Finally, they were asked whether they learned anything from the IE programme which they did not know before. A qualitative analysis of teacher responses was undertaken.

Results

On the *Attitudes towards Characteristics of Less Academic* Pupils *Scale,* the pre-test mean for the group of teachers involved in the programme was 71.3 (Std Devn= 9.5) and the post-test mean was 77.1 (Std Devn=11.6). A *t*-test for matched groups, administered to compare these pre and post test results, yielded a significant mean change ($t(17) = 2.6$; $p<.01$). This represented a significant overall improvement in the attitudes to academically weaker students on the part of those teachers who were involved in the IE programme.

A Sign Test (Siegal, 1956) was applied to the sample's pre and post test results on the Scale to determine on which items the number of subjects demonstrating positive change

was significant. Although it is a relatively crude measure of change, the Sign Test is useful for small sample studies in which quantitative measurement is not feasible. The outcome of this statistical procedure is presented in Table 1 below.

Table 1

Items reflecting significant teacher group change after intervention on the *Attitudes to the Characteristics of Less Academic Pupils Scale*

Item	Level of significance *(p)* *
Less academic pupils are difficult to teach → are easy to teach	0.03
Less academic pupils tend to not be interested in learning → desperately want to learn	0.01
Less academic pupils have mainly themselves to blame for their lack of success → owe their lack of success to circumstances beyond their control	0.006
Less academic pupils have nothing to teach me → have something to teach me	0.03
Less academic pupils cannot generalise what they have learnt → are perfectly capable of generalising what they have learnt	0.04
Less academic pupils gain a limited amount from my lessons → gain a great deal from my lessons	0.03

Note: $n = 18$* Based on the outcome of the Sign Test

As Table 1 shows, a significant number of teachers changed their attitudes in a positive direction on a number of items on the scale. They felt more positive about the less academic pupils in relation to their learning ability and their ability to generalise, and felt more confident about their own ability to teach these students.

Responses by the 18 participating teachers on each of the questions of the Feedback Questionnaire, administered at the end of the programme, are summarised below.

1. Strengths of the Programme

All teachers identified strengths in the programme, and common themes running through their descriptions were: IE's flexibility; its relevance to all school subjects; its usefulness for subject integration; its empowerment of pupils.

Specific comments included, inter alia, the following: *assists with integration of subjects; empowers pupils to critically analyse statements, and plan ; it enriches learners, gives them options at the starting point of bridging; a good place to start from in lesson preparation.* Further, it *encourages confidence and involvement of pupils.* Again, certain teachers stated that IE enabled learners to experience fun while learning, and others stated that it helps learners to develop to their full potential.

2. Difficulties associated with the implementation of the programme

Twelve of the eighteen teachers identified difficulties. Most of those believed IE to be time consuming, and a common theme was the time constraints and extra workload involved in preparation and/or administration of the programme, and its difficulty in being placed within the school timetable. Difficulties were also experienced by some in integrating principles of IE in the curriculum. Certain teachers stated that the success of IE depends on the training received by the teacher concerned. Actual comments made include the following: *school periods were not systematically/regularly allocated to it; there is a need to concentrate more on daily teaching; too time consuming; lack of time to prepare IE lessons; teachers have a problem with writing IE lessons.*

3. Opportunities for learning

All teachers regarded IE as providing opportunities for learning, and some 24 reasons were given for this response. Teachers also considered the IE programme a good basis on which to conduct continuous assessment – as required by OBE. Most of the teachers believed that IE's emphasis on thinking skills fostered creative thinking, logical thinking, task analysis and, metacognition. Furthermore, teachers believed that IE enabled children to learn at their own pace, thus promoting competence.

Some of the comments included the following: *Encourages flexibility in thinking in different directions; enables all to participate; students are likely to think for themselves, to be more creative and to share opinions; the weaker pupils are given more time and feel good; it contains no subject matter, and therefore provides opportunities for students to contribute from their own experiences; the approach does not generate anxiety in students.*

4. Use in lessons of the principles and concepts from the Instruments

Most teachers applied the principles and concepts from the Instruments in their subject lessons. Beyond this, a number of teachers documented their use of subject matter from their own subject areas as a means to teach their student such skills as accurate

comparison and the importance of perspective. In this way, teachers illustrated that they had benefited from the *scaffolding*, an aim of which was to re-orient teachers to applying their subject content to the achievement of cognitive goals or thinking skills.

5. *New learning afforded to teachers by the IE programme*

Seventeen out of the eighteen teachers responded that they had learned something new from the IE programme. Most teachers learned that the principles and concepts of IE can be applied across the curriculum; and that subjects can be linked. Many teachers learned that tasks can be tackled more effectively and easily through critical thinking, planning and metacognition.

Teachers came to see the value and methods of bridging; the fact that a single programme can be used on a number of levels to match the ability of particular learners; certain teachers commented on the integration between learning and values afforded by the approach. One teacher commented that *given the right tools, a teacher can make a difference to the quality of pupils' thinking*; another stated that *the elements of IE are diverse, flexible, innovative and imaginative*; while another added that *it provides a framework for assisting slow learners.*

A number of the teachers recommended that IE should be introduced to all schools and several teachers commented explicitly that the concepts and principles are similar to those of OBE.

Discussion

The implementation of this project took place against a backdrop of situational constraints and problems, which are typical of the current education system in South Africa. The economic and administrative problems are largely the result of the educational disadvantage and administrative ineptitude spawned by the apartheid policy. The need to rationalise resources, to retrench teachers, and to redeploy others in more disadvantaged areas has led to a great deal of acrimony, tension and resentment.

These factors led to some attrition, inasmuch as the original five schools were reduced to four and within the remaining schools some of the IE-trained teachers left after starting the programme. Further, within the participating schools, there was some disruption in the teacher workshops and in the implementation of the IE in the classrooms. Notwithstanding these difficulties, a viable programme was designed and implemented at schools representative of those in both the *Coloured* and the African communities.

Among the problems facing the new South African government is the fact that their commitment to the cognitively-oriented Outcomes Based Education (OBE) is not matched by the preparedness of the teachers for its implementation. The education authorities have admitted that they have been unable to adequately prepare teachers, and have noted that

these teachers have had minimal training in relation to OBE. However, in spite of this admission, there appears to be insufficient cognisance of the need for teachers themselves to improve their own thinking skills and to increase their commitment to the development of the thinking of others, before OBE can succeed. As Williams and Burden (1998) point out, *..merely altering the syllabus is not in itself sufficient in promoting change....it is the way in which teachers methodologically mediate the curriculum which is significant,* (p.193).

In the present study, the role that Instrumental Enrichment and mediation can play in providing a framework, both for enhancing teachers' own thinking skills and for facilitating their application of these skills within their current curricula, has been illustrated.

The finding that teachers became more positive towards weaker students, and developed more confidence in their modifiability and in their capacity for benefiting from education, supports the importance of this approach to teacher preparation for implementing OBE. For, if OBE is to be effective in providing optimal education for all pupils, including the vast majority of historically disadvantaged students, teachers will have to actually believe in their ability to educate such students. Moreover, with the introduction of the government's Inclusion policy, hand in hand with OBE, teachers will have to cope with a great diversity of educational needs within their classrooms.

An important outcome of this and other studies in which a form of IE has been implemented, is the motivation generated among teachers for using the programme and its principles of teaching. However, without the active support of administrators and policy makers the success of IE will be limited. As Haywood (1990) has pointed out, for IE or any other cognitively based programme to be effective, its philosophy and methodology need to pervade the system.

The positive results achieved with IE, as well as the logic contained in the notion that the approaches developed within the spheres of cognitive education and cognitive psychology are needed to make the ideal of OBE a reality, may provide the impetus for the education authorities to promote the adoption of this and comparable cognitive methodologies in education. In this way, both the attitudes and the tools for implementing the OBE approach could be inculcated among teachers.

Finally, in this study a model was provided which demonstrated that a combined *add-on* and *infusion* model of thinking skills development can be provided in a school, by equipping teachers (and students) both with IE (i.e. the add-on dimension) and with the expertise to link subject matter with cognitive principles and goals (that is, their infusion within the curriculum). Instilling thinking skills in association with OBE could be seen as an antidote to a situation where OBE becomes simply another perspective approach,

where teachers are *trained* in the provision of a specific set of outcomes, without opportunities for learning how to develop their own curricula and goals, based on the needs and characteristics of their students.

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PEER TUTORING AND SOCIAL BEHAVIORS: A REVIEW

Barbara J. Bolich
Gonzaga University

Children with disabilities often need social skill interventions. Regular classrooms rarely provide training or maintenance programs for social skills to meet the needs of children who are mainstreamed. Educators who work with these children need effective and easily implemented interventions that provide increased practice and opportunities to participate in social interactions with typical peers. Peer tutoring interventions were examined as a means of increasing appropriate social behavior in the classroom. Peer tutoring studies have taken various forms (e.g., cross-age, classwide, reciprocal) and evaluated many different aspects of social behavior. This paper examines such studies and proposes guidelines for future peer tutoring programs. Such guides should improve our knowledge of effective tutoring programs, and their effects on the social behavior of children with disabilities.

Peer tutoring in its simplest form involves a student helping another student learn a skill or task (Franca, Kerr, Reitz, & Lambert, 1990; Sprick, 1981). Peer tutoring can take various forms, such as classwide peer tutoring, small groups, and same-age or cross age dyads (Miller. Barbetta, & Heron, 1994). One-to-one tutoring is the most effective form of instruction known, with a strong data base supporting its use across students of almost all ages and conditions (Slavin, Madden, Dolan, Wasik, Ross, & Smith, 1994). The use of peers as tutors has a long, successful history in education (see Allen, 1976; Meacham, Montague, & McLaughlin, 1994; Montague, Meacham, & McLaughlin, 1991), and peer tutoring programs have been found to be more effective than some traditional teacher-moderated instructional methods (Greenwood, Dinwiddie, Terry, Wade, Stanley, Thibadeau, & Delquadri, 1984; Kohler & Greenwood, 1989). Well-structured peer

tutoring programs need to be examined as ways to improve the academic achievement and social skills of children with disabilities, especially in inclusionary programs in regular classrooms.

Peer tutoring research in the last two decades has focused on the potential benefits and drawbacks of involving children with disabilities as either tutors or tutees. Involving children, especially academically underachieving students, in peer tutoring programs demands strong justification. The potential academic benefits to tutees are persuasive, but insufficient, grounds for implementing peer tutoring programs; if, however, peer tutoring can be shown to meet multiple needs of both tutors and tutees, arguments for its use will be more convincing (Cook, Scruggs, Mastropieri, & Casto, 1985-86; Osguthorpe & Scruggs, 1986). Researchers contend that peer tutoring does produce not only academic benefits for tutors and tutees, but social benefits as well. Improvements in academic achievement as a result of peer tutoring have been found in the areas of math (Greenwood, et al., 1984; Franca et al., 1990; Harper, Mallette, Maheady, & Clifton, 1990; Maheady, Sacca, & Harper, 1987; Maher, 1982), social studies (Maheady, Harper & Sacca, 1988; Maheady, Sacca & Harper, 1988; Maher, 1982), vocabulary (Greenwood, et al., 1984; Hogan & Prater, 1990), spelling (Greenwood, Dinwiddie, Bailey, Carta, Dorsey, Kohler, Nelson, Rotholz, & Schulte, 1987; Greenwood, Terry, Arreaga-Mayer, & Finney, 1992; Greenwood, et al., 1984; Harper et al., 1990; Hogan & Prater, 1990; Muirhead & McLaughlin, 1990), reading/language arts (Cochran, Feng, Cartledge, & Hamilton, 1993; Maher, 1982; Scruggs & Osguthorpe, 1986; Top & Osguthorpe, 1987), sign language (Eiserman, Shisler, & Osguthorpe, 1987; Shisler, Osguthorpe, & Eiserman, 1987), and language and social play (Scruggs, Mastropieri, Veit, & Osguthorpe, 1986).

Social benefits of peer tutoring have been measured and reported in many studies, but vastly different methods of defining and measuring results have been used. Social behaviors have been defined as attendance (Maher, 1984; Scruggs et al., 1986), cooperation (Cochran at al., 1993), social acceptance (Shisler et al., 1987), social status (Franca et al., 1990), specific characteristics of peer interactions (Cochran at al., 1993; Graesser & Person, 1993; Maheady & Sainato, 1985; Scruggs et al., 1986; Trapani & Gettinger, 1989), number of disciplinary referrals (Maher, 1984; Scruggs et al., 1986), aggressive behavior (Lazerson, 1980), and self-concept (Franca et al., 1990; Labbo & Teale, 1990; Lazerson, 1980). Measurements have been made through teacher ratings (Cochran at al., 1993), student ratings (Cochran at al., 1993; Shisler et al., 1987), interviews (Cochran at al., 1993), direct observation (Franca et al., 1990; Scruggs et al., 1986; Trappani & Gettinger, 1989), administration of scaled instruments designed to measure social behaviors (Giesecke, Cartledge, & Gardner, 1993; Labbo & Teale, 1990; Scruggs et al., 1986) and anecdotal observations by teachers, students, parents, and/or

naive observers (Balenzano, Agte, McLaughlin & Howard, 1993; Giesecke et al., 1993; Maher, 1984; Scruggs et al., 1986; Tabacek & McLaughlin, 1994). Observations have occurred during tutorial sessions (Cochran et al., 1993), and in non-tutorial school settings (Cochran et al., 1993; Franca et al., 1990; Maher, 1984). The diversity of definitions and measurement methods may be due to the complex nature of social behavior, the diversity of children themselves, and the absence or presence of specific variables in peer tutoring programs. There is a strong need for further understanding and analysis of peer tutoring's effects on the social behavior of children with disabilities. Children with mild disabilities frequently are deficient in cognitive social functions (Sabornie, 1991) and engage in inadequate or inappropriate social behaviors, which often result in their rejection by typical peers (Eiserman et al., 1987). Such problems may persist into adulthood, and are strongly linked to high drop-out rates, delinquency, mental health problems, and dishonorable discharges from the military (Barkley, 1990; Sabornie, 1991; Schumaker & Hazel, 1984).

Social skill deficits also affect friendships, employment relationships, and other aspects of normal day-to-day life (Sabornie, 1991). Schumaker and Hazel (1984) speculated that social skill deficiencies may be as disabling as academic deficits, creating double handicaps for many children with disabilities. Research attempts to discover the essential social competencies necessary for adjustment to work and school environments have identified: (a) competencies that enable compliance with expected norms, such as listening, staying on-task, promptness, and compliance; and (b) competencies that promote positive interactions with other people, such as positive responding, appropriate conversation skills, and the ability to maintain social interactions (Conway & Gow, 1988; Walker, Todis, Holmes, & Horton, 1988). Walker et al., (1988) further contend that social competence is situation-specific, with standards of acceptability established by the people relevant to a particular situation. Social skills are the distinctive strategies employed in social interactions that allow decisions to be made about an individual's social competence (Walker et al., 1988). Schumaker and Hazel (1984) define social skills *as any cognitive function or overt behavior in which an individual engages while interacting with another person or persons* (p. 422). Cognitive functions are further delineated as empathizing; discriminating and acting on social cues; and anticipating and making decisions based on expected consequences of social behaviors (Schumaker & Hazel, 1984). Overt behaviors include nonverbal and verbal interaction elements, such as eye contact, body language, utterances, and sign language. (Schumaker & Hazel, 1984). Social interactions are reciprocal, consisting of both initiations and responses (Odom & Strain, 1986).

Social skill deficiencies are frequently manifested as failures to initiate interactions with peers, failure to respond to peer initiations, or inappropriate responding to peer

initiations (Goldstein & Ferrell, 1987). Many students with disabilities exhibit these interpersonal communication skill deficiencies (Goldstein & Ferrell, 1987; Maher, 1984), which contribute to their failure in regular education settings (Meadows, Neel, Scott, & Parker, 1994; Mercer & Mercer, 1994; Sabornie, 1991). These students are often rejected by their non-disabled peers, and occasionally choose to reject their typical peers (Sabornie, 1991).

The movement towards full inclusion demands that educators recognize and intervene in social skills deficiencies. Competent social skills not only contribute to academic and vocational achievements, but might help students compensate for academic deficiencies (Mercer & Mercer, 1994). Regular education teachers may recognize the presence of social skills problems in students with behavior disorders, but usually fail to make accommodations for them (Meadows et al., 1994). Students with behavior disorders receive little, if any, social skills instruction in mainstream settings, and any training begun in more segregated settings usually ceases when the child enters the regular classroom (Meadows et al., 1994). Meadows et al. (1994) reported finding that 79% of regular classroom teachers acknowledged using the same techniques to manage the behavior of all students, whether disabled or not. They speculated that regular teachers may expect the behavior problems of children with disabilities to have been *fixed* in self-contained or pull-out programs, with no further adaptations necessary (Meadows et al., 1994). Such *fixing* does not occur and maintain without regular classroom intervention. Analog training has failed to produce significant generalization of social skills to other, more natural, environments (Strain & Shores, 1983); teaching students to role-play in clinical settings, such as pull-out or self-contained classrooms, has failed to improve social skills in the regular classroom and on the playground. One reason for this failure is that socially responsive peers are essential to any social behavior intervention (Strain and Shores, 1983). Typical students both initiate social exchanges and respond to social initiations more than students who are socially withdrawn (Shores, 1987). Analog training rarely includes typical peers as models or subjects. Integrated settings, therefore, provide greater opportunity for the practice and reinforcement of social skills (Shores, 1987; Strain & Shores, 1983). Researchers have recommended structured peer tutoring programs as a way to increase opportunities for students to engage in appropriate social interactions with their peers (Ehly & Larsen, 1976; Eiserman et al., 1987; Kohler & Greenwood, 1989; Scruggs et al., 1985; Strayhorn, Strain, & Walker, 1993).

Peer tutoring could augment social skills training by (a) promoting the generalization of social behaviors in integrated classroom settings and (b) involving typical peers as models of appropriate social interactions. Peer tutoring can improve the chances for students with disabilities to succeed in regular classrooms by not only increasing peer interactions (Miller, et al., 1994), but by establishing behaviors that promote peer

acceptance, such as cooperation and positive reinforcement (Eiserman et al., 1987). Peer tutoring should not, however, be implemented simply for the benefit of students with disabilities, but should target typical children as well. Sabornie (1991) argued that social skills training procedures should target both students with disabilities and their peers. One possible benefit is increased social acceptance. Instructional interventions designed to increase the social acceptance of students with disabilities by their typical peers have primarily focused on altering the attitudes of typical children, while excluding actual contact with children with disabilities (Eiserman et al., 1987). Such analog attempts to create empathy and sensitivity may simply promote stereotyping of students with disabilities (Shisler et al., 1987). Typical children need to become aware of not only the differences, but the positive attributes, competencies, and commonalties of their exceptional peers (Shisler et al., 1987). Peer tutoring deserves consideration as a way to accomplish this goal.

Learning to self-manage behavior is a critical life skill (Hogan & Prater, 1993), and Odom and Strain (1986) assert that social interactions in the classroom need to be self-managed. Teachers rarely receive training in how to promote social interactions between students (Odom & Strain, 1986), and teacher-involvement has been shown to hamper or terminate student interactions (Strain & Powell, 1982). A well-structured peer tutoring program may well address these issues by providing teachers with a tutor-training format, a means of shaping and monitoring student interactions with a minimum of involvement, and by establishing tutor-tutee interactions patterns. Interventions designed to foster social behaviors in children with disabilities must target behaviors that will promote the reciprocity of social interactions, both on the part of the subject students, and on the part of their peers (Mercer & Mercer, 1994; Odom & Strain, 1986). Structured and well-run peer tutoring programs can do this successfully.

Research has repeatedly demonstrated that peer tutoring is an effective academic intervention (Scruggs & Osguthorpe, 1986). Effective academic instruction has been shown to have a positive impact on both academic and social behaviors (Maheady & Sainato, 1985; Strayhorn et al., 1993). Research suggests that behavior-focused interventions may have positive effects on behavior but are unlikely to impact academic performance (Morgan & Jenson, 1988). Improving academic performance, however, is quite likely to contribute to improved social behavior (Morgan & Jenson, 1988; Strayhorn et al., 1993). The most effective programs for underachieving students emphasize prevention over remediation (Giesecke et al., 1993; Maheady et al., 1988b), use direct instruction (Giesecke et al., 1993), increase meaningful on-task time (Giesecke et al., 1993; Greenwood et al., 1984), increase responding (Giesecke et al., 1993; Greenwood et al., 1984), and individualize instruction in reading, writing, and math (Giesecke et al., 1993). Academic achievement is also strongly linked to frequent testing, student access

to content materials, interactions with proctors, and rules and contingencies linked to on-task behavior and academic attainment (Greenwood et al., 1984). Effective programs must also be viable across settings, students, behaviors, instructors, and time if they are to have a broad impact (Slavin et al., 1994). Structured peer tutoring formats can be shaped to meet all of the above criteria for effective instruction. Peer tutoring is probably not in and of itself sufficient to address the social skills needs of students with disabilities, but a well-structured program can improve academic achievement; provide modeling and practice in appropriate reciprocal peer interactions across settings, time, and persons; and increase the acceptance of students with disabilities by their typical peers.

Research In Peer Tutoring with Social Skills Measurements

Cochran et al. (1993) conducted a cross-age peer tutoring study involving 16 African-American 7 to 11 year old boys with behavior disorders in a self-contained school. Eight students functioned as controls, four served as tutors, and four were tutees. Ratings for the students on a teacher-completed Behavior Evaluation Scale ranged from 44 to 85, with particular difficulties exhibited in excessive motion, noncompliance, aggression towards adults and other students, and off-task behaviors. Pre- and post-treatment measures of social skills were rated by teachers, who assessed the students' social skills, problem behaviors, and academic competence; and by the students, who rated their own cooperation, assertion, empathy and self-control skills. Direct observation was also used to measure cooperative and uncooperative statements, and social validity was rated through individual interviews with the students at the end of the study. Teachers perceived significant increases in tutees' social skills, decreases in problem behaviors, and significant academic achievement increases as compared to control students. Tutors were rated similarly in these social skills areas, but scored a significant decline in academic competence, nearly twice that of their controls. Increased academic cooperative statements and decreased uncooperative and put-down statements were observed during the tutorials and lunch period for all students involved in the intervention. The tutors and tutees also self-reported academic progress, improved interpersonal relationships, program satisfaction, and a willingness to function as tutors or tutees again. Tutors reported improved understanding of the tutees, and teachers reported observing more positive attitudes towards schoolwork and increased self-confidence.

The authors credited the improvement in positive and cooperative statements to: (a) tutor training in prompting and feedback and reinforcement or corrective feedback for these behaviors; (b) the use of stickers as reinforcers for following the established format and for making more positive cooperative statements than negative or uncooperative statements; and (c) the tutorial nature of the intervention (Cochran et al., 1993). These students were rated among the worst behaved in a self-contained school for children with

behavior disorders. The peer tutoring intervention produced significant improvements in their social skills. Perhaps a longer study, or one involving typical students would produce even better results.

Shisler et al. (1987) examined the effects of peer tutoring on the social acceptance of fifth and sixth grade students with behavior disorders by their typical peers. A reverse-role format was used to meet the criteria established by Watts (1984, as cited in Shisler et al., 1987) for increasing the social acceptance of students: (a) minority group students must be of equal or higher status than majority students, (b) intimate personal interactions should be fostered, and (c) both groups should be working towards a mutual goal (Shisler et al., 1987). Pretreatment assessment determined that the students in two regular classrooms viewed their peers in the two self-contained classrooms for the behaviorally disordered more negatively than they did typical peers in other classrooms. Posttreatment evaluation revealed a significant improvement in the attitudes of the students in the regular classrooms towards their tutors in the self-contained classroom which had provided tutors for them. A three-month maintenance check determined that those attitude changes had persisted over time. The authors found that improved attitudes did not, however, generalize to the students in the other self-contained classroom (Shisler et al., 1987). Shisler et al. (1987) effectively used a peer tutoring intervention to improve the attitudes of typical peers towards specific students with behavior problems. If the students from the self-contained setting had spent time in the regular classroom, with additional opportunities to interact with their typical peers, perhaps more dramatic changes would have occurred. Future studies should also examine the social behavior and attitudes of the tutees.

Balenzano et al. (1993) conducted a successful reciprocal peer tutoring intervention with six preschool children with disabilities. Informal teacher observations throughout the study reported an increase in positive social interactions among dyad partners, peers choosing to sit by or work with tutoring partners during other activities, the spontaneous use of tutoring procedures with novel stimuli, increased sharing and language usage during unstructured playtime, and eagerness on the part of students to participate in tutoring sessions (Balenzano et al., 1993). A successful replication of this study by Tabecek et al. (1994) also resulted in anecdotal reports of increased socialization among peers across settings and time, and eagerness on the part of the students to participate. These studies found preschoolers with disabilities generalizing socialization skills learned in a peer tutoring format to other classroom settings.

Franca et al. (1990) conducted a multiple baseline across-subjects study of peer tutoring in math. The participants were eight boys, ages 13-9 to 16-3, enrolled in a self-contained classroom in a private school for emotionally disturbed/behavior disordered students.

Pre- and post-treatment measures were used to assess the results of the intervention on social status using a rating scale measure and a peer nomination measure that included both positive and negative sociometric criteria. Intra-dyadic ratings were further analyzed. Self-concept was measured with the Piers-Harris Children's Self-Concept Scale, and direct observation of social interactions during physical education classes was conducted to measure positive and negative verbal interactions. The results showed inconsistent changes in social status and self-concept, but positive social interactions increased significantly and negative social interactions decreased. Follow-up data for the first two dyads showed improvements in positive interactions maintaining for the two tutors, with only slight decreases for the tutees; decreases in negative interactions maintained across all four students. This study found peer tutoring effective in improving social interactions between students in a self-contained school. Longer studies and the involvement of high-status or typical peers might produce effects that would register on self-concept instruments over time.

Maher (1982) conducted a 10-week comparison study involving three groups of six high school students with conduct disorders as either cross-age peer tutors, tutees in an established peer tutoring program, or recipients of formal group counseling. Academic achievement was measured in regular-classroom math, language arts, and social science classes. Targeted social behaviors were the number of teacher-written disciplinary referrals made to the vice principal, and rate of attendance. The cross-age tutors made slight improvements in math over the other groups, significant improvements in language arts over the counseling group, and significant improvements in social science over the peer tutoring group. The cross-age tutors also had significantly fewer absences than either of the other two groups, whose absentee rates increased significantly throughout the intervention and follow-up periods (Maher, 1982). Maher also found the tutors to have significantly fewer disciplinary referrals than the others. Regular classroom teachers anecdotally reported positive changes in social behavior only for the cross-age tutors. Maher's (1982) peer tutoring intervention not only required tutors to interact with younger children with disabilities, but also demanded that tutors walk to a different school, and spend 15 to 20 minutes each week collaborating with the tutee's special education teachers to plan lessons and evaluate the intervention. Increasing tutor responsibility within a well-structured cross-age peer tutoring program resulted in significant positive behavior changes.

Lazerson (1980) measured social behavior in a cross-age peer tutoring study involving 60 withdrawn and aggressive students. Measurement took three forms: an adapted version of Luszki and Shmuck's (1960) Self-Concept Scale was used to measure student self-concepts, the Devereaux Elementary School Behavior Rating Scale was used to measure aggressive and withdrawn behaviors, and teachers filled out a questionnaire at the

conclusion of the study to rate student behavior. Tutors received two brief training sessions in corrective and reinforcing feedback, but had *free manipulation* of the content material during tutorial sessions. The tutors were encouraged to hold sessions over 5 weeks for 20-30 minutes each, but the participation rate was low, with some students only meeting with their tutees as few as 5 of 23 possible sessions. The students who actively participated showed significant gains in attitude and self-concept, but Lazerson (1980) concedes that the study would have benefited from (a) teacher-generated structure; (b) consistent sessions, preferably daily for 20 minutes; (c) well-defined tutor and tutee roles; (d) better matching of dyad members; and (e) the implementation of evaluation procedures.

Labbo and Teale (1990) implemented a cross-age reading program with 20 fifth grade students who were below-average readers as measured by the Iowa Tests of Basic Skills. Many of them were also judged to be at-risk. Students were divided into three groups: one control, one to engage in art interactions with kindergarten students, and one to read to kindergarten students. The readers' roles had four structured stages: (a) teacher-guidance in selecting a picture book in the school library, individual repeated practice reading the book, and teacher-direction in how to introduce and discuss the book; (b) pre-reading collaboration with peers to share readings; (c) cross-age reading sessions; and (d) post-reading collaboration with the teacher. The Piers-Harris was used to measure student self-concept and showed significant gains for the fifth grade readers. While not strictly a peer tutoring intervention, this study shows that creating well-structured teaching opportunities for students can improve their self-concepts.

Trapani and Gettinger (1989) compared the results of a structured social communication skills training intervention alone, and in combination with a cross-age reverse-role peer tutoring component, to a control group. The subjects were 20 fourth to sixth grade boys with learning disabilities, randomly assigned to one of three groups. Resource room teachers had rated the boys on the Walker Problem Behavior Identification Checklist (WPBIC) as deficient in targeted social skills: Greeting, asking questions, answering questions, complimenting, and listening. The Test of Written Spelling (TWS) was used to measure spelling ability. The social skills training for the two intervention groups consisted of seven days of 30-minute direct instruction in the individual target behaviors, with students required to exhibit mastery by stating a behavior's definition, correctly identifying positive and negative examples, and implementing the skill correctly in five role-playing situations. Students in the peer tutoring group then tutored typical second-grade boys in spelling thrice weekly for 4 weeks. The 20-minute sessions were designed to provide multiple opportunities for the tutors to practice the targeted social skills. After each session, tutors completed a self-monitoring checklist, and received additional feedback on their use of the target behaviors from an observer. Separate observations

were conducted three times in the natural classroom by trained independent naive observers. These pre-, mid-, and post-intervention observations randomly recorded occurrences of the target behaviors. Results showed (a) peer tutors scored higher on the TWS than either of the other groups; (b) no significant difference on WPBIC scores; and (c) tutors exhibited significantly higher rates of both greeting and answering questions in the classroom. Anecdotal reports suggested the tutors experienced an increased sense of personal responsibility. The authors speculate that the WPBIC ratings showed no significant improvements due to teacher bias and/or instrument insensitivity. The targeted social skills may not have been particularly valued by teachers, and changes may have occurred in so short a time, or been of such a nature that they failed to register on the WPBIC.

The tutoring intervention used in this study was designed to link social skills training and the generalized application of those skills to the natural classroom setting by providing opportunities for guided practice and active rehearsal of target behaviors. Future research over longer periods of time should continue along these lines. Scruggs et al. (1986) involved 24 third to fifth grade students with behavior disorders in a cross-age peer tutoring program. Students were randomly assigned to be either tutors or controls over four 5-week sessions. Tutees were three low-functioning, severely multiply disabled children aged 10 to 12, enrolled in a separate self-contained classroom. Two tutors taught language skills using DISTAR materials, while the third modeled and consequated socially relevant play behavior by playing classroom games with the tutee. The researchers measured a variety of social behaviors for the five weeks preceding and five weeks duration of each student's involvement as tutor or control. Measurements were made with the Attitude Toward School survey, the Devereoux Child Behavior Rating Scale, absences, disciplinary actions by teachers, two independent observations by a naive observer in different settings both before and after each student's involvement as either a tutor or control, and daily data on an individualized target behavior for each tutor (i.e. kicking, arguing, positive comments). The results found no significant differences in absences between tutors and controls or in the number of disciplinary actions made by teachers. The formal instruments found no significant differences in attitudes toward school or behavior ratings, and the control students alone made insignificant improvements in target behaviors. Observations found 14 tutors and 7 control students exhibiting more appropriate school behaviors, with tutors making insignificantly more positive statements to tutees during sessions. Ten of the 12 tutors in this study self-reported improvements and satisfaction with the tutoring program, while one moved before the study was completed and the other was concerned over missed school work. The results of this study illustrate the need to carefully structure and monitor peer tutoring programs. Particular attention must be paid to dyad formation: involving students in separate classrooms, who have no further opportunities for meaningful social

interactions is likely to do little to enhance the social behavior of students with social deficits.

Giesecke et al. (1993) conducted a study involving fourth grade low-status tutors who were reading at the third grade level, and third grade tutees who read at grade level. Tutors received one week of 30 to 40 minute training sessions before the intervention, which consisted of 19 30-minutes sessions over five weeks. A multiple baseline design across sets of 20 words was employed, with the number of correctly identified sight words measured. A structured format was adopted, with tutors trained to use scripted lessons, various games, and testing and charting procedures. The Piers-Harris Children's Self-Concept Scale and individual student interviews were used to assess the tutors' self-perceptions. The tutees showed dramatic improvements in sight word acquisition, with tutors also showing significant improvement. The Piers-Harris showed substantial post-test gains for three of the tutors, with one unavailable for testing. The tutors self-reported enthusiastic satisfaction, a desire to continue the program, pleasure in *getting to help* other students, with only one tutor concerned about missed seat work. Teachers anecdotally reported improved tutor behavior in the classroom. This was a well-structured and closely supervised tutoring program. The authors contend that functioning competently in the role of teacher encouraged students to assume characteristics of leadership, (e.g. prestige, competence, authority). Implementing a class-wide peer tutoring program would eliminate student concerns over missed work by involving all students simultaneously.

Graesser and Person (1993) found that separate peer tutoring programs implemented with seventh graders and college students generated approximately 240 times more tutee questions then regular teacher-led instruction. They speculate that the tutoring setting removed some of the social barriers that typically hinder student questioning and created an environment where students felt comfortable and appropriate asking questions (Graesser & Person, 1993). In this case, peer tutoring increased student interactions dramatically in an academic context. The study was not designed to measure non-academic social interactions, but increased academic-oriented interactions in peer tutoring settings have been shown to generalize to other settings (Balenzano et al., 1993; Tabacek & McLaughlin, 1994). Studies examining the effects of reverse-role peer tutoring in sign language on social behavior found the tutors, who were labeled as mentally retarded, engaging in significantly more positive social interactions with their typical peers; an increase that maintained over time (Osguthorpe & Scruggs, 1986). Peer tutoring programs were originally recognized as being ***multifaceted experiments in socialization***, and on-task behavior and cooperation were the initial effects of peer tutoring noted by Bell in his classic peer tutoring program (Osguthorpe & Scruggs, 1986).

Maheady et al. (1988a) conducted an effective study of class-wide peer tutoring in a secondary resource room social studies program, where students reported feeling they were ***better liked,*** peers were nicer to them and thought they were smarter, and that they in turn were nicer to their peers. Teachers also reported satisfaction with this program. A similar study by Maheady et al. (1988b) in three regular social studies classrooms including 14 students with mild disabilities and 36 typical students produced significant academic improvements and was also pleasing to teachers and students. Maheady and Sainato (1985) evaluated the effects of peer tutoring on the social interactions, social status, and academic achievement of students in three regular fifth grade classrooms. One dyad was formed in each classroom, consisting of a high-status tutor and a low-status tutee. Thirty minutes of math tutoring prior to lunch produced significant improvement in the tutees' daily math scores. Observations of social interactions during lunch found an increase in positive exchanges and a decrease in negative social interactions which maintained somewhat over a four-week follow-up period. Slight positive changes in the social status of tutees were also noted. Inclusion programs can use similar peer tutoring procedures to ease the transition of students with disabilities into regular classrooms. Further involving low-status tutees as tutors might increase social benefits and improve status even more significantly.

Conclusions

Social skills training and the promotion of positive relationships between peers are important elements of successful education programs (Strayhorn et al., 1993). Social interaction skills are best taught and learned through actual practice with others under close monitoring and supervision (Strayhorn et al., 1993). Peer tutoring programs can increase and promote the generalization of social skills by providing opportunities for students to (a) learn and practice specific interaction skills and behaviors, (b) enhance self-confidence and language skills, (c) respond and practice content material, (d) learn complex chained behaviors, and (e) engage in fun activities with cognitive benefits (Tabacek & McLaughlin, 1994) in meaningful interaction with other children. Preventative measures are preferable in social behavior education, and improving the overall effectiveness of classroom instruction with methods such as peer tutoring may be more important than developing procedures to compensate for behavior problems that occur as a result of poor quality instruction in the first place. (Maheady et al., 1988b).

Inclusive programs are becoming increasingly widespread as educators seek to improve the education of children with special needs; peer tutoring is ideal for integrated classrooms (Byrd, 1990). Peer tutoring appears to be a way to meet the need for preventative measures and effective instructional procedures that will ensure the academic and social achievement of all students (Maheady et al., 1988b). Both inclusion and peer tutoring are essential elements in the future of regular and special education

(Byrd, 1990), and future research is needed to discover how best to implement peer tutoring programs that enhance the academic and social behaviors of children with disabilities.

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OBSESSIVE-COMPULSIVE DISORDER IN CHILDREN AND ADOLESCENTS: DEFINITION AND TREATMENT

Kristin J. Wright
and
T. F. McLaughlin
Gonzaga University

Obsessive-compulsive disorder (OCD) is a condition that affects a higher than originally believed number of children and adolescents. OCD is characterized by recurrent thoughts and rituals that interfere with the patient's daily life and cause significant distress. There are many common obsessions and compulsions, but the disorder is quite complex and can manifest itself in many different ways. Two effective methods of treatment include behavioral therapy and pharmacological treatments. There is not a lot of data about children with OCD, but they present a unique type of student that a teacher must consider.

Obsessive-compulsive disorder (OCD) has been documented in the literature for years, but until recently those who suffered from the disorder were considered defective and untreatable (Antony, Downie, & Swinson, 1998). In the past 25 years, a new interest has been placed on this disorder and major advancements have been made in the areas of diagnosis and treatment. It is a disorder that is more common than most people think and can severely impair the quality of life of its sufferers (Clarizio, 1991; March, 1995; March & Leonard, 1998). OCD can be more complex when one is dealing with children and adolescents with the disorder. This paper will examine obsessive-compulsive disorder, its effects on children and adolescents, treatment procedures, and ways to work and assist these children with OCD in the classroom.

Definition of the Disorder

OCD involves recurrent obsessions and/or compulsions that are severe enough to

interfere with the patient's daily life and cause significant distress. Obsessions are defined by the American Psychiatric Association in the Diagnostic and Statistical Manual (DSM-IV, 1994) as persistent ideas, thoughts, impulses, or images that are experienced as intrusive and inappropriate and that cause marked anxiety or distress and compulsions are defined as repetitive behaviors or mental acts, the goal of which is to prevent or reduce anxiety or distress, not to obtain pleasure or gratification (American Psychiatric Association, 1994). Most persons exhibit both obsessions and compulsions at some point in the course of the disorder, and the two are often related to each other.

Common obsessions include fear of contamination, fear of harm to self or others, aggressive themes, sexual themes, scrupulously/religiosity, forbidden thoughts, symmetry urges, and a need to tell or confess things. Common compulsions include, washing, repeating, checking, touching, counting, ordering/arranging, hoarding, and praying (March & Leonard, 1996; 1998). One unique characteristic of OCD patients is that most are aware of the fact that their obsessions and compulsions are unreasonable, but they are unable to stop performing them. However, with children, this awareness may be to a lesser degree because of their young age and lack of overall self-awareness. There is a specification in the DSM-IV (1994) that does not require children to be aware of the unreasonableness of their obsessions or compulsions because of their lack of cognitive awareness.

Common features of the disorder.

One problem with recognizing OCD is that there is no exact set of symptoms that all patients display. As time passes, many of the symptoms of patients change, though there are not necessarily any environmental factors prompting the change. There are very few children who display only one type of obsession or compulsion. Most children with OCD display multiple symptoms of both types (March & Leonard, 1996).

There are several common types of obsessions. One of the most prevalent is thoughts about contamination by casual contact with someone or something ordinary. In recent years, obsessions about contracting AIDS have risen as the disease has become more widely publicized and feared (Clarizio, 1991). A need to have things in a particular order to the extent that the patient becomes extremely upset if they are out of place or not perfect is another very common type of obsession. Other popular obsessions include repeated doubting that a door is locked or some other procedure has been completed correctly, recurrent sexual imagery, and aggressive impulses.

Many children and adolescents recognize their obsessions as unreasonable and inappropriate, but are unable to refrain from engaging in them. Most children do not understand why they think these things, but continue to do so, causing tremendous

anxiety. Because these thoughts are not considered to be appropriate, most children and adolescents do not share them with anyone, but continue to suffer in silence as the symptoms progress and intensify. Many obsessions lead directly to the sufferer engaging in rituals designed to alleviate the anxiety related to the intrusive and dominating thoughts.

One of the most common compulsions, or rituals, associated with OCD is compulsive washing (Hanna, 1995; March & Leonard, 1996). Because the patients fear contamination, they will wash their hands repeatedly, even to the point where their skin becomes raw, in an attempt to remove the contaminant. Another compulsion related to contamination obsessions involves the patient wearing gloves and performing elaborate avoidance rituals to protect themselves from the perceived harm. Often times these rituals become self-justifying so that they continue to manifest themselves, even after the initial obsession has been lessened or alleviated (Foa, Steketee, & Milby, 1980).

Another common compulsion involves mental rituals such as counting, praying, or repeating words or phrases. These types of rituals can be easily masked because they are not directly observable, but persons with OCD can spend hours a day repeating these mental rituals in hopes of correcting a perceived problem or attempting to relieve anxiety. The goal for the individual engaging in compulsions is to prevent a potentially horrible event from occurring, neutralizing something that is believed to have occurred, or to relieve anxiety and distress about some feared situation.

Issues Related to Diagnosis of OCD

Due to the secretive nature of this disorder, it is often misdiagnosed or overlooked completely. Patients are often reluctant to share what they are going through because it appears so out of the ordinary and strange. Problems with diagnosis are also related to lack of familiarity with the disorder in the medical community (March & Leonard, 1996). There is some confusion about when exactly a superstition or habit becomes an obsession or compulsion (Clarizio, 1991). Some degree of superstitions, rituals, and anxiety are a normal and healthy part of childhood development. It is when these develop to the degree where they have no inherent purpose and interfere with normal functioning that a diagnosis of OCD must be considered.

Another issue related to diagnosis is the fact that other problems can arise as a result of or in conjunction with OCD. Many OCD patients suffer from anxiety disorders, depression, disruptive behavior, and/or tic disorders (Clarizio, 1991; Rapoport, Leonard, Swedo, & Lenane, 1993; March & Leonard, 1996). OCD that goes unrecognized or untreated in patients often leads to severe depression because the patients realize that what they are experiencing is not normal, but are unable to change their behaviors or

receive support from those around them. This is especially an issue of concern for adolescents (Clarizio, 1991). OCD is not an exclusionary diagnosis, so other disorders can be diagnosed in patients and are quite common. One study found 84% of the subjects had other lifetime psychiatric diagnoses (Hanna, 1995). This multiple disorder feature often complicates the diagnosis by masking the most significant symptoms and can result in a delay in proper treatment.

Tic disorders also have a high rate of comorbidity with OCD. It is estimated that 20-30% of all OCD patients also have tic disorders (Hanna 1995; Rapoport et al., 1993). It has also been found that anywhere from one-third to two-thirds of all Tourette's syndrome patients have OCD (Clarizio, 1991). The relationship between the two disorders is unclear, but patients who display both disorders retain the symptoms for both disorders over time, so it is not believed that one disorder develops into the other, but that they are likely alternate forms of the same disorder (Rapoport et al., 1993).

One distinction that should be made is between OCD and obsessive-compulsive personality disorder (OCPD). Patients with OCPD do not display actual obsession or compulsions, but rather a pervasive pattern of inflexibility, perfectionism, and orderliness (Clarizio, 1991). Each disorder has a specific set of diagnostic criteria. Both can be present in a patient because OCD requires that the patient engage in actual rituals or obsessive thoughts, whereas OCPD involves general personality characteristics. OCPD can cause many problems for students in school and is something educators should be aware of because it can result in poor academic performance, but can be alleviated with specific teaching and counseling strategies (Parker & Stewart, 1994).

Description of the Population with OCD

One in 200 children and adolescents is believed to suffer from OCD (March & Leonard, 1996). It is difficult to gather accurate data on OCD because it is such a secretive disorder. Children can often hide their symptoms from family and friends for years before the symptoms begin to manifest themselves publicly. Patients may realize what they are doing and experiencing is not normal and attempt to hide it from others for as long as possible because of fear of mocking, especially in adolescence (Clarizio, 1991). Another issue in determining prevalence is that there is no one symptom or feature that makes OCD unique, so it can easily be misdiagnosed or overlooked.

Some dispute about the extent to which age and gender affect the disorder has been found in the literature. Most published studies involving children have populations with more boys than girls (Fischer, Himle, & Hanna, 1997; Hanna, 1995; March & Leonard, 1996; Thomsen & Mikkelsen, 1995). Despite that disparity, OCD is believed to strike males and females equally. Hanna (1995) found that boys experienced an earlier onset of the

disorder and more severe cases at onset than girls. Boys are more likely to display the disorder before the age of 10 than girls. Most girls first experience symptoms during adolescence. These differences disappear over time and appear to have no impact on the later severity or type of symptoms that are displayed (Retter, Swedo, Leonard, Lenane, & Rapoport, 1992). It is believed that the later onset of the disorder in girls leads to the disparity in study populations, rather than actual significant differences in the populations affected by the disorder.

There has been speculation in the past that symptoms of OCD would differ by gender. However, most recent studies have found no significant differences in males and females with OCD. There is some evidence to support a greater tendency towards cleaning rituals in adult women, but there was no difference in severity of overall symptoms or duration of illness for males or females (Hanna 1995; Retter et al., 1992). Studies have found higher rates of OCD in Caucasian children than in African American or other minority youths, but there is no data to support differences in rates due to ethnicity or geographic regions (March & Leonard, 1996). These higher rates could be explained by several factors, such as access or willingness to pursue treatment, or due to other, unrelated variables.

Differences between adult and youth populations with OCD.

Due to the many differences between children and adults, one must be careful not to over-generalize research about adults to children. However, studies have shown that OCD in children manifests itself much like OCD in adults (Hanna, 1995). It is important to learn more about the disorder as it affects children and adolescents because it is estimated that one third to one half of all adult cases had a childhood or adolescent onset (March, 1995). If the patients can be successfully diagnosed and treated when they are younger, then there will be less adults suffering from the disorder in the future. Even with this connection, most of the research has focused on adults with the disorder, rather than children or adolescents.

Some Treatment Options for OCD

While OCD has been recognized for over a century, there was little known about how to effectively treat the disorder until recently (Jackson & Morton, 1994). For the most part, patients were written off as untreatable and told to deal with their symptoms. Other treatments, such as psychotherapy, were attempted with little or inconsistent success. In the past 25 years, two effective methods of treatment have emerged: cognitive-behavioral therapy (CBT) and psychopharmacological treatments (Christensen, Hadzi-Pavlovic, Andrews, & Mattick, 1987).

Cognitive Behavioral Therapy Treatment

CBT has been the primary method of treatment for children and adults with OCD for the

past twenty years. The techniques have been refined, but the basic principles have remained intact and proven to be an effective and enduring method of treatment. The two main components of CBT are exposure and response prevention. In addition, anxiety management strategies and cognitive therapies have been included in some treatment protocols as supplements to the primary exposure and response prevention treatments (March & Leonard, 1996).

The key to implementing CBT treatment is determining what specific symptoms the patient displays and what objects cause the most anxiety in the patient. From there, specific therapies can be developed that provide gradually increasing contact with the feared stimulus and the patient can be taught techniques to assist in eliminating mental rituals.

There are various types of exposure therapy. With exposure therapy, the patient must come into contact with the anxiety-producing stimulus and remain in contact with it until his or her anxiety diminishes. The most popular is in vivo exposure, where the patient has actual direct contact with the feared substance. The other primary type of exposure therapy is imagined exposure. This type of therapy the children and youth must imagine contact with the feared object. Many therapists are also choosing to use both methods of exposure in conjunction with one another and that has proven to be the most effective method over time (Abramowitz, 1996).

Other exposure variables include who controls the exposure (therapist or patient) and whether the exposure is gradual or flooded from the start. For younger patients such as children and adolescents, in vivo exposure, with or without imaginal exposure and gradual presentation of the stimuli have proven to be the most effective and widely used (Abramowitz, 1996; March & Leonard, 1996). Patient control of the feared stimulus is also preferred, however, some patients, especially younger ones, require therapist control in the initial stages of treatment, before control can be transferred over to the patient. The goal of exposure therapy is to decrease anxiety until it reaches a level where the patient no longer fears contact with the stimulus (March & Leonard, 1996).

Response prevention focuses on preventing the patient from engaging in his or her preferred rituals, both discernible and mental types of rituals. Typically, one type of ritual is focused on at a time and the person must refrain from engaging in the ritual when presented with a situation that typically leads to the ritual. Well-designed interventions will recruit family members to help ensure that the patient does not engage in the ritual during the day and to provide support. For most children, the home supervisor is a parent or care provider with a strong vested interest in the child or adolescent with OCD. Response prevention therapy should also include an element of

discussion about the rituals and developing mental strategies to avoid engaging in them (Foa, Franklin, & Kozak, 1998).

CBT was found to be most effective when both exposure and response prevention were combined (Abramowitz, 1996). While both procedures help with overall OCD symptoms, the exposure element appears to help lessen obsessions and anxiety, while the response prevention helps to eliminate the rituals (Foa et al., 1990). The longer the treatment course lasts, the more effective and lasting the results appear to be (March, 1995). Also, periodic refresher sessions should be included in follow-up to help promote lasting results (March & Leonard, 1996). Finally, the CBT should focus on the patient's specific symptoms, so a detailed understanding of the patient's individual situation must be compiled before a treatment program can be implemented.

Psychopharmacological Treatment

Another form of treatment that has proven effective for many youth has been psychopharmacologic or medication therapy (Christensen et al., 1992; Marks, 1997). There are two main types of medication that are currently prescribed for children with OCD: the tricyclic antidepressant clomipramine and specific serotonin reuptake inhibitors such as fluoxetine (Prozac), fluvoxamine, and sertaline (Jackson & Morton, 1994). Clomipramine has been the most thoroughly studied medication with children and had been approved by the Food and Drug Administration (FDA) for children age 10 and older (March & Leonard, 1996). Clomipramine has the most significant effects for reducing obsessions, and 70% of patients who are treated with it show improvement (Clarizio, 1991). There are few long-term side effects that have been encountered with clomipramine use, though some heart problems have developed in patients, so they should be carefully monitored while receiving the medication.

The other set of medications that have shown promise in the treatment of OCD are a group of drugs called selective serotonin reuptake inhibitors (SSRIs). There have been few clinical trials conducted with these drugs, especially with regards to children, but the studies that have been completed show promising effects in both adults and children (March & Leonard, 1996). There is a need to conduct more research to verify their effectiveness and safety, but early results have proven promising.

Both the clomipramine and SSRIs work to inhibit serotonin reuptake in the brain because OCD appears to be connected to improper serotonin levels (Jackson & Morton, 1994), although the exact relationship is still unclear. One potential drawback to the medical methods is that it is unclear if improvements can be maintained once the patient has stopped taking the drug (Thomsen & Mikkelsen, 1995). If a child is first prescribed one of these drugs at age 12, he or she could potentially have to continue taking it for the rest of his or her life to remain symptom-free.

Results with any treatment regime will vary among individual patients and should be examined on a case-by-case level. Many researchers have hypothesized about the success of combining both forms of treatment. Further research needs to be explored that compares the CBT, pharmacological, and combined forms of treatment and how they are maintained over time.

School Issues for children with OCD.

There is little or no data regarding how OCD children function in school (Clarizio, 1991). Because it is such a secretive disorder, many students can go through school without displaying their condition and teachers may never know. But if a teacher knows that a student has been diagnosed and is receiving treatment for OCD, he or she should be sensitive to the student's needs and limitations. Mocking the obsessions or compulsions must not be tolerated by the student's peers and school should be a place that is as free from anxiety-producing stimuli as possible. Some interventions may include school related situations and involve teacher input as well. As with most disorders, awareness, understanding, and flexibility are key to helping the OCD student succeed at school.

Conclusions

OCD is a very serious disorder that necessitates further research and study. OCD is a common neurobehavioral disorder characterized by dysregulation in circuits linking frontal cortex to striatum and thalamus (March & Leonard, 1998). Because it has such an early age of onset in most cases, an improved understanding of childhood and adolescent OCD would be beneficial to persons of all ages with OCD and could help avert the suffering of adult patients. Both behavioral and medical treatment approaches have shown promise and should be further explored and refined to better serve OCD patients. Recent data has found that cognitive behavior therapy can be combined with psychotropic interventions and these outcomes can be very positive for persons with OCD (Christensen et al., 1987; March & Leonard, 1998).

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THE USE OF MNEMONIC STRATEGIES AS INSTRUCTIONAL TOOLS FOR CHILDREN WITH LEARNING DISABILITIES

Barbara Bolich
and
T. F. McLaughlin
Gonzaga University

The present paper reviews and examines the use of mnemonic strategies as an instructional procedure to assist children with learning disabilities. The available literature indicated that teachers who employ such strategies assist their students on a variety of academic measures. Difficulties with employing mnemonic strategies were outlined. Further research evaluating mnemonic strategies in classrooms which more approximate those found in today's schools was recommended.

Children with learning disabilities frequently have difficulty remembering information (Condus, Marshall & Miller, 1986). Kavale and Forness (1986) note that memory deficiency is now considered one of the central identifying characteristics of students with learning disabilities. Different theories exist as to exactly where the problem lies. Researchers disagree over (a) how memory works, (b) what processes are involved, and (c) how best to deal with memory deficiencies (Polloway & Patton, 1993). According to Smith (1981), poor memory performance may be attributed to either disabilities or inadequate strategies of learning, retention, or recall.

Some researchers argue that children with learning disabilities can correctly acquire, store, and retrieve information, but are deficient in knowing how and when to use specific strategies for remembering (Meese, 1994). Other researchers such as Sutaria (1985) argue that children with learning disabilities have difficulty attending to selective details of a stimulus, resulting in inadequate or inappropriate mental images. These learners may lack strategies for organizing information for storage or for retrieving

stored information (Sutaria, 1985). Whatever the cause, these deficits result in students who tackle each learning opportunity as though it were a new one (Sutaria, 1985). Children with mild disabilities also fail to employ metacognitive processes as they learn (Meese, 1994) and do not self-monitor learning tasks.

Mnemonics, strategies used to enhance remembering by connecting new knowledge with familiar words and images (Levin, 1983; Scruggs & Mastropieri, 1990a, 1990b; Woolfolk, 1993) have been suggested as a remedial treatment for students with memory deficiencies. Mnemonics involve the presentation of information in ways that promote retention, and provide structured strategies for retrieval of that information (Mastropieri & Scruggs, 1991). Mnemonic strategies include pegwords (words associated with numbers, used to remember lists of items); phonetic mnemonics (associating sounds with numbers to remember a list of unassociated numbers); keywords (associating a similar-sounding word with a targeted word); acronyms (using the first letter of each word in a list to construct a word); acrostics (creating a sentence where the first letter of each word is the targeted information); reconstructive elaborations (mimetic, symbolic, or acoustic structures linking unfamiliar material with familiar terms, words, or pictures); (Mastropieri & Scruggs, 1991) spelling mnemonics, number-sound mnemonics, and the Japanese *Yodai* (a form of elaborate pictorialization) method (Scruggs & Mastropieri, 1990b).

During the 1980s, Mastropieri and Scruggs engaged in lengthy research involving 24 separate studies with 938 students in grades 3 through 12. Twenty-one of these studies were conducted primarily with students with learning disabilities, two involved children with mild mental disabilities, and one involved students with behavior disorders (Scruggs & Mastropieri, 1990b). The researchers employed a variety of mnemonic strategies and compared them against control conditions such as free study, teacher-led *traditional* instruction, and rehearsal variations (Scruggs & Mastropieri, 1990b). They found that mnemonic instruction consistently produced positive effects on the retention of information over time by the mildly handicapped students involved in their research (Scruggs & Mastropieri, 1990a, 1990b).

Mastropieri and Scruggs' research was based on three premises: (a) meaningfulness increases the learning of new material, (b) students who self-generate strategies for learning and remembering increase meaningfulness, and thereby remember better than students who do not, and (c) students with learning disabilities are deficient in generating effective memory strategies (Scruggs & Mastropieri, 1990a). Mastropieri, Scruggs, and Fulk (1990) offered various rationales for using mnemonic strategies for students with learning disabilities: (a) students with learning disabilities tend to lack a semantic knowledge base, and mnemonics place only slight demands on prior knowledge;

(b) acoustic encoding precedes semantic encoding developmentally, and students with learning disabilities who are language delayed can benefit from mnemonic strategies that rely on acoustic effects; (c) abstract vocabulary is more difficult for students with learning disabilities and mnemonics are a way to express abstract ideas in more concrete ways; and (d) students with learning disabilities seem quite capable of using and benefiting from mnemonics that use visual imagery.

Researchers have argued that mnemonic devices may aid recall, but have little or negative effects on comprehension, but Scruggs and Mastropieri (1990b) counter that comprehension in and of itself does not ensure remembering. They assert that the value of mnemonic strategies is its impact on concreteness and meaningfulness, which in turn enhance comprehension. For example, Mastropieri et al., (1990) credited an increase in comprehension of vocabulary words to the students' knowledge of an increased number of vocabulary words. In the same vein, Scruggs and Mastropieri (1990b) argued that without the use of mnemonics many students with mild handicaps would not be able to remember material, and would therefore have little chance of comprehending specific content.

Research studies have not only demonstrated significant increases in learning and retention with the use of mnemonics (Condus, Marshall & Miller, 1986; Mastropieri et al. 1990; Scruggs & Mastropieri, 1990a; 1990b), but have also demonstrated a resultant transfer of that learning to novel contexts (Scruggs & Mastropieri, 1990a, 1992). Students who learn the theory of mnemonics, Mastropieri and Scruggs (1991) contend, will be able to employ mnemonic strategies in other content areas. Research has examined the use of mnemonics with a wide variety of curriculum subjects, including Moh's hardness scale, vocabulary, names and characteristics of dinosaurs, history, phonics, spelling, and math (Scruggs & Mastropieri, 1990a, 1990b).

Scruggs and Mastropieri (1990b) developed textbooks with mnemonic content and strategies, and progressed from experimenter-led research models to teacher-led classroom studies, in order to improve the relevance of their findings for the classroom. The lack of commercially-produced mnemonic instructional material is a problem for educators who wish to use mnemonic techniques, but Scruggs and Mastropieri (1990b) contend that teachers can produce effective materials with some time and effort. They acknowledged the difficulty in devising and producing effective material as quickly as they wanted, but related that even teachers with little artistic ability constructed appropriate materials (Scruggs & Mastropieri, 1990b).

Sample Studies Involving Mnemonics

King-Sears, Mercer, and Sindelar (1992) conducted a study comparing a systematic

teaching condition, an imposed keyword mnemonic, and an induced keyword mnemonic condition on the ability of students with mild disabilities to learn and remember the definitions of novel science vocabulary terms. The systematic condition consisted of direct instruction through effective teaching techniques, and the imposed keyword condition incorporated teacher-provided keyword mnemonics. The induced keyword condition was used to determine if students could successfully generate and employ their own keyword mnemonics. The subjects were 34 males and 3 females in sixth through eighth grade. Thirty of the children were diagnosed with learning disabilities, and seven had been labeled as either emotionally or behaviorally disordered. All attended resource rooms for reading, language arts, and/or English classes. Three special education teachers received 4-6 hours of training in one of the three methods of instruction. Forty-eight 10th grade science vocabulary words were clustered by category and presented in groups of 12 over the four week study. Large cards (8.5 x 11") were used to present the terms, with card content varying by treatment. Teachers were required to follow a specific script for presenting material in each condition. Each week had three days of instruction and one day of testing. Each teacher spent 3 minutes of Day 1 demonstrating their instructional technique with sample words. Each instructional day then consisted of 12 minutes of scripted instruction and a 5 minute written quiz over the vocabulary. Students were tested twice on the fourth day of the week over all 48 words; first on their ability to write definitions for the given terms, and then on their ability to match given terms and definitions. Post-treatment tests were given at one and three weeks to check maintenance. This study found no significant effects on the written definitions or matching tests for the four weeks of the study. They did, however, find significant differences on the matching measure for the fourth week's words during the fifth-week maintenance check for both the imposed and induced keyword conditions. No significant difference was found for either the 48- or 12-word sets during the eighth week maintenance check. The researchers report that students in both keyword conditions (particularly the imposed group) were learning and remembering more information than the control group, but that the differences were not significant. The students and teachers involved in the keyword conditions reported satisfaction with these methods. They enjoyed the novel presentation, although students in the induced condition felt challenged by the task of creating their own mnemonics.

This study actually showed very little difference favoring mnemonic instruction over systematic skill instruction. Since both teachers and students enjoyed the mnemonic strategies, however, and students performed well in comparison to the control group, mnemonics should be considered as at least an optional method of instruction. This study seems to indicate that further research is needed in mnemonics, utilizing a variety of mnemonic strategies and more content-area material with students with mild disabilities.

Heron (1992) conducted a study examining the use of the FIRST Letter Mnemonic Strategy on the science test grades and attitude toward science of fifth grade students in a regular classroom. The FIRST Letter Strategy consists of an acrostic mnemonic designed to help learners shape information into a form that is easily remembered: **F**orm a word; **I**nsert a letter; **R**earrange the letters; **S**hape a sentence; **T**ry combinations. Nine students with disabilities were assigned to either a control or treatment group on the basis of gender, IQ, memory retention, and science class test scores. Typical students were divided on the basis of their scores on the Iowa BASIC Skills Test and classroom grades. The control group consisting of 20 typical students and 4 children with learning disabilities. The treatment group had 20 typical students and 5 students with learning disabilities. The resource room teacher collaborated with the regular science teacher to identify concepts and to outline the mnemonic strategy. The treatment group received training in the use of the FIRST Letter Mnemonic Strategy for eight weeks. They learned to locate word lists in the text, write out the words, and create mnemonic devices according to the FIRST Letter Strategy. Upon mastery of the technique, the students applied the strategies to the targeted science concepts. Baseline scores were established by averaging science test scores before treatment. Post-treatment test scores showed an increase in test scores across all students in the treatment group, while test scores decreased slightly for students in the control group. The children in the treatment group self-reported (a) satisfaction with the FIRST Letter Strategy, (b) enjoying science more since learning the strategy, and (c) intentions to continue using the strategy. The researchers reported teacher satisfaction with the collaborative efforts and integration of teaching strategies between the regular and special education teachers.

This study highlights a potential problem when using mnemonics in the classroom. Learning mnemonic devices can be as difficult as learning original material (Polloway & Patton, 1993). The teachers in this study reported spending eight weeks training students in the use of the FIRST Letter mnemonic, without identifying how much time was spent per week in training, nor any impact on learning during the training period. Teachers need to consider the time demands of training students in a new technique, and weigh potential benefits against other, more rapid techniques such as active choral responding, guided notes, peer tutoring, or flash card drills (Heward, 1994).

Mastropieri et al. (1990) compared the effects of a keyword mnemonic condition to a direct instruction rehearsal condition on the ability of 25 students with learning disabilities to recall and comprehend 16 abstract and concrete vocabulary terms. The subjects were 17 boys and 8 girls of normal intelligence in the sixth, seventh and eighth grades. All students attended resource rooms in one of several mid-western schools.

Eight abstract (e.g., octroi, vituperation) and eight concrete (e.g., carnelian, soutache)

vocabulary terms were selected from a larger list used in a previous study involving college students. One additional word of each type was selected for practice instruction. The keyword condition involved using 18 8.5" x 11" cards, each printed with the vocabulary word, the keyword in parenthesis, and the definition. Concrete word cards contained a depiction of the keyword in interaction with the definition. Abstract word-pictures showed the keyword interacting with an instance of the definition. The rehearsal condition used similar cards without keywords or any reference to them in the picture. Two tests were used, one requiring students to orally state the definition of each word, and the other a comprehension matching test.

Students were randomly assigned by grade level to either condition. Two researchers delivered an equal number of treatment conditions to individual students in an empty classroom. The keyword condition began with teaching the two practice keywords, then showing the mnemonic picture of each for 30 seconds. Students were asked to look at the picture while the researcher gave a scripted explanation of the word, the keyword, the definition, and the picture. Each student (a) was asked for the definition and a description of the picture, (b) took practice production and comprehension tests over the words, and (c) received feedback on their answers. After this practice, students were shown each of the 16 vocabulary word cards for 30 seconds in the same format as the practice session, followed by the production recall and comprehension tests.

The rehearsal condition similarly took students through the practice words and tests before tackling the vocabulary words. Students individually practiced pronouncing all 16 words during a brief preview. The experimenters then led them through drill and practice, rapid-paced questioning, and corrective feedback, spending 30 seconds on each word card. One additional minute was spent reviewing all 16 words. Since keyword instruction was deleted in this condition, students in the rehearsal condition spent more actual time in instruction, although the time spent with the experimenter was the same for both conditions.

All students them spent one minute writing their name, date of birth, address, and so on, at the request of the researcher. Each child then received, again individually, first the production recall test and then the comprehension test. The experimenter read each question aloud and recorded answers verbatim on the answer sheets. The results of this study showed students in the keyword mnemonic condition exhibiting higher levels of both recall and comprehension than the students in the direct instruction rehearsal condition across both concrete and abstract words. A main effect was also found on the production test for concrete words.

In this study, students taught with the keyword method demonstrated an ability to apply

their vocabulary learning by supplying appropriate vocabulary words in novel instances on the comprehension test. This demonstrated that mnemonic techniques facilitate comprehension at least on a par with other instructional procedures. If students are able to learn more vocabulary with mnemonic-based instruction, comprehension may actually be enhanced. The amount of time spend with individuals, however, was impractical for most classroom teachers. There is a need for additional research involving group instruction.

Fulk, Mastropieri, and Scruggs (1992) examined the effects of intensive generalization training in complex mnemonic strategies on the ability of students with learning disabilities to independently transfer the strategies to other areas. 56 middle-school students of normal intelligence, who spent part of each day in a resource room, and experienced difficulty in content-area classes were randomly assigned to one of three conditions: mnemonic generalization, mnemonic generalization and attribution training, or a rehearsal condition. An attribution pretest was administered to all students.

Phase one of the intervention lasted for one day and used training cards, difficult vocabulary words, and scripted lessons to introduce students to their particular strategies. Training cards were similar, but contained a keyword depiction of vocabulary terms for the mnemonic conditions and no-keyword pictures for the rehearsal condition. Two cards depicting positive attributional statements and a scripted lesson were also used in the second condition. Phase two lasted for two days, implementing further training for each condition. Guided practice and modeling were used with ten-page booklets containing vocabulary terms to train students in the particular strategies associated with their condition. Students in the attributional mnemonic condition also received training in implementing attributional strategies. Two recall measures were administered daily: one a production test (students were to answer a question with the correct vocabulary word) and an identification (matching) test. Phase three consisted of two generalization and maintenance checks that occurred at one-day and two-week intervals after phase two ended. Identical assessment booklets containing novel vocabulary words were used for all conditions. Students were instructed to use the method that would best help them to study for an impending quiz. They were given 10 minutes to study the words, and then took the test. An attribution posttest was also administered at the two week interval.

No significant differences were found across conditions for phase one, on either the production or identification tests. Both mnemonic conditions showed significant differences on the first phase two production test over the rehearsal condition, and the mnemonic generalization students significantly out-performed the rehearsal students on the first phase two identification test. The second set of tests during phase two showed students in both mnemonic conditions scoring significantly higher than the rehearsal

condition group. No significant differences were found on either of the Day 1 tests of phase three, (but the rehearsal condition students insignificantly outperformed both of the mnemonic groups). The 2-week test found a significant difference for the mnemonic conditions on the identification test, but not on the production test. No significant difference was found on the attributional post measurement.

Fulk et al., (1992) felt that students in the mnemonic condition may have needed more exposure to keyword strategies before they were trained to use them. They also speculate that the 10-minute study period prior to testing in phase three was insufficient for students to utilize keyword strategies (designing strategies, drawing pictures, and studying). Fulk et al. (1992) acknowledge that the rehearsal strategy was easier to transfer to novel settings, and that some learners in the mnemonic conditions simply skipped words for which they had difficulty thinking of keywords. Fulk et al., (1992) suggested that future studies include training for such situations. They propose that the results of the attributional measure suggest that such training is not as necessary for students who are trained to use mnemonic strategies.

This study demonstrated that mnemonic techniques can be used in content area classes with some degree of success. Students in this study were probably already familiar with rehearsal strategies. Perhaps some long-term studies involving mnemonic strategies taught to the same students over time might be pertinent. This study also highlighted one potential drawback to mnemonic instruction: it takes time. Teachers working with students who are underachieving academically may not have the time to train students to use new demanding strategies to mastery. Mnemonic research needs to compare its techniques to a wide variety of other instructional and learning methods, effectively honing the practice of mnemonics to specific situations, settings, content, and learning styles.

Conclusions and Recommendations

Mnemonic strategies are demanding, not only on teachers, but on learners as well. Fulk et al., (1992) acknowledged that mnemonics may be difficult for students with learning disabilities to generalize because of *the demands placed on word knowledge, insight, and creativity*. Teachers who plan to use mnemonics need to decide whether they will simply use the strategies, or assume responsibility for teaching students to employ them. Some questions that might be addressed in mnemonic research are whether such strategies can be taught through modeling alone over time, whether any strategies for remembering are taught in schools with any consistency, and if there are other, easier ways to promote remembering with less effort and time. Learning mnemonic devices can be as difficult as learning original material at times, and mnemonic strategies need to be carefully matched to content to ensure that students are not overwhelmed (Polloway & Patton,

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TEACHER AND STUDENT PACING IN PROGRAMMED READING: EFFECTS FOR STUDENTS WITH BEHAVIOR DISORDERS

T. F. McLaughlin
Gonzaga University
and
R. P. Reid
Stanwood School District No. 401

The effects of two pacing contingencies on the reading performance of nine elementary students with behavior disorders were examined. Teacher pacing involved requiring students to complete a specified amount (14 pages) of programmed reading each day. Self-pacing was defined as students being allowed to complete as many pages as they wished during the one hour reading period. Comparisons between the two pacing contingencies were evaluated with a combination multiple baseline and ABABA single case replication experimental design. Data were gathered on both the accuracy of performance and the number of pages completed. The findings indicated that students completed more pages when teacher pacing was in effect than during student self-pacing. Accuracy of performance was high and not affected by either experimental manipulation.

Pacing contingencies, where the teacher or student develop rates of progress through curricula materials, has been suggested as a possible strategy to improve student performance (McLaughlin, 1991; Williams, 1976). Self-pacing is a procedure where the student can progress thorough the curricula materials at his/her own pace. Teacher pacing involves the teacher determining the amount of material to be covered within a specific period of time. In a early investigation of pacing, McLaughlin and Malaby (1974) found that teacher pacing produced greater progress through commercially

available map skills program than did student self-pacing. McLaughlin and Malaby (1975) also found that allowing students to advance to the next unit of material in social studies and science with 100 percent mastery produced higher rates of unit completion and higher letter grades for an entire class of fifth and sixth grade students. This finding suggests that allowing students to move to the next unit of material may for some students serve as a reinforcer.

In a recent study with students with behavior disorders, McLaughlin (1991) found greater advancement by students in spelling curricula when the students were allowed a same day retake of their final unit test. The benefits of employing pacing contingencies include the ease of implementation at the classroom level (McLaughlin & Malaby, 1974, 1975), the ease of tracking and monitoring student progress (Semb, Conyers, Spencer, & Sosa, 1975), and the applicability across a wide variety of subject-matter areas and student populations (Hursh, 1976; Williams, 1976).

Based on the accumulated literature, it appears that student advancement through curricula may be enhanced through teacher pacing, retake opportunities, assignment length, and self-determination of reward. The question of which type of pacing strategy should be applied to curriculum materials with students with disabilities has not been clearly addressed. For students with behavior disorders, who have academic problems along with deficits in social behaviors, too little research on the academic problems of such children has taken place (Kauffman, 1997; Morgan & Jenson, 1988).

The purpose of the present report was to compare the effects of teacher pacing and student self-pacing on the rate of pages completed and accuracy of performance in a commercially available reading program, *Sullivan Programmed Reading* (Buchanan, 1973) with students with behavior disorders. Student preferences concerning the two pacing procedures were also assessed.

Method

Participants and Setting

The participants were nine male students enrolled in a self-contained classroom. The students were labeled as behaviorally disordered by a multi-disciplinary team (MDT) which made use of such data as physicians' reports, behavioral assessment, teacher reports, and matching of the state and Federal definition for the handicapping condition. The students engaged in behaviors such as lying, physical and verbal aggression, low rates of academic responding, and truancy. The academic performance of the students from the *Wide Range Achievement*, *Key Math*, and the *Woodcock Johnson Reading Mastery* tests indicated that in the basic skills students were from 2.3 to 4.6 years behind in reading, arithmetic, and spelling. The students ranged in age from 11 years 3 months

to 13 years 2 months. The reading period lasted for 60 minutes from 9:15 to 10:15 a. m. each school day. The classroom was staffed by a full-time teacher and part-time teacher's aide.

Materials

The curriculum materials consisted of the workbooks from the *Sullivan Programmed Reading* series (Buchanan, 1973). The answers in the texts were covered to prevent academic dishonesty on the part of the students. Answers were corrected by the teacher at the end of each class session.

Dependent Variables and Measurement Procedures

Three dependent variables were employed in the present research. The first was the number of pages completed in *Sullivan Programmed Reading*. A completed page was defined as such if all of the frames (questions) were completed. The second measure was percent correct. The percent correct was calculated by dividing the number of correct answers (frames) by the total attempted and multiplying by 100. These data were only gathered from the one hour reading period. Third, the preferences of the students as to the various experimental manipulations were also gathered via teacher oral assessment. He asked the students to: (a) *Rate your liking of the experimental conditions*, and (b) *Rate your ease of learning during self pacing and teacher pacing*. Each of these items were scored on a seven-point scale.

Experimental Design and Conditions

The effects of the two pacing contingencies were examined in a combination ABABA and multiple baseline design (Kazdin, 1982).

Teacher pacing. During the teacher pacing condition, the students were required to complete 14 workbook pages of programmed reading. This amount of work has been found to improve the academic achievement of low-income students in a variety of classrooms and school districts (Bushell, 1978; Weis 1976). If the student did not complete the required number of pages the work had to be made up during the afternoon recess. The teacher pacing condition was the standard manner in which the reading program was carried out in the special education classroom. This condition was in effect for three times ranging from 6 to 12 school days.

Self pacing. During this phase, the students were informed they could complete as many pages in their reading workbooks as they wished. This procedure was in effect twice for a total of 12 school days.

Reliability

Reliability of measurement was calculated for each of the three measures. An agreement

was marked if both the teacher and the aide scored the student response in the same manner. Any deviation was recorded as a disagreement. Reliability of measurement for percent correct was 98% (range 90 to 100%). Reliability for the number of pages completed and student responses on the oral questionnaire items was 100%.

Reliability checks as to the fidelity of the independent variables were taken once per week. Another teacher in the building came to the classroom, observed the reading class and indicated which student was in teacher pacing or student pacing. Agreement on this measure was 98% (range 89 to 100%).

Results

Number of Pages Completed

Pages completed by each student indicated that more pages were completed during the teacher pacing than during self-pacing. This finding was replicated each time teacher pacing was in effect and across all nine students.

During teacher pacing, the average number of pages completed was 14 per day. Each student met the criterion of completing 14 pages per day during the 60 minute reading period. During student self-pacing, student completion rates decreased. The average completion rates decreased with some students only completing an average of 1 to 2 pages per day.

Percent Correct

The percent correct for each pupil was graphed. Data indicated that no differences in accuracy of performance between either experimental manipulation were found. The average accuracy of performance averaged from 70 to 99%.

Student Preferences

Student responses were mixed to which phase they liked best. Five of the students rated the teacher pacing a *7* four of the students gave the self-pacing condition a *7*. All nine students felt they had an easier time learning during teacher pacing. Eight students scored this condition a *7* while one student gave this condition a rating of a *6*.

Discussion

The superior performance of teacher pacing in terms of the number of pages completed replicates previous investigations with college and university students (Lloyd, McMullin, & Fox, 1976; Malott & Sivinicki, 1969; Semb et al., 1975; Sutterer & Holloway, 1975); and with general education elementary school students (McLaughlin & Malaby, 1974, 1975). The present outcomes expand the scope of inquiry and demonstrated the effectiveness of teacher pacing with students enrolled in special education as well as with

students with behavior disorders.

Findings that higher teacher standards produced higher rates of academic performance could be linked to various other explanations such as increased teacher expectations as well as opportunities to respond (Berliner & Biddle, 1994; Morgan & Jenson, 1988; Rosenthal & Jacobson, 1968; Walker & Rankin, 1983). Setting high standards for performance may be especially important for children and youth with behavior disorders.

The student ratings as to the various experimental conditions was interesting. One would tend to predict that the students would prefer a procedure where their performance was better. In the present research this was not the case. Over half of the students preferred the self pacing procedure. However, when the class was asked to rate their learning, they felt that the teacher pacing procedure was more effective. This provides some measure of social validity (Kazdin, 1977; Wolf, 1978) for the use of teacher-pacing in special education classroom environments. In the present case, the consumers (students) rated the procedure that generated the most academic gain the most favorable in terms of their perception of their learning.

In all, it appears that teacher pacing is not only a very straightforward and easy to implement procedure in the classroom, but most important, a potentially useful one with special education children and youth. The adoption of teaching pacing may assist other teachers in adopting appropriate criteria to improve student performance, especially those with behavior disorders.

The limitations of the present research included the use of only programmed reading materials. Also, the use of an alternating treatments design rather than a withdrawal design may have allowed for a more fairer comparison between teacher and student self-pacing. Especially if the student pacing condition would have included a formal set of contingencies. In the present research, the students were simply informed they could complete as many pages as they wanted. The availability of the afternoon recess during the teacher pacing condition may be viewed as providing a possible confound, since additional instructional time for students to complete their work. However, no student had to use this time during teacher pacing.

Future research should examine the effects of teacher versus student pacing with students having differing disability conditions, or in other academic areas rather than reading, with texts or curricula materials that are not individualized or programmed. Use of pacing procedures by practitioners needs to be experimentally validated so that pacing criteria are not too high or low for these specific students. Given the history of repeated academic failure for a majority of behaviorally disordered students (Heward, 2000;

Kaufman, 1989, 1997; Morgan & Jenson, 1988) this seems to be a particularly important factor to evaluate.

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PARENT LIFE MANAGEMENT AND TRANSFORMATIONAL OUTCOMES WHEN A CHILD HAS DOWN SYNDROME

K. Scorgie
Azusa Pacific University

L. Wilgosh,
D. Sobsey,
and
J. McDonald
University of Alberta

Our research examines three aspects of effective life management in parents of children with disabilities: strategies parents find helpful for effectively managing life, personal qualities that parents consider important to effective life management, and parent transformational outcomes on personal, relational and perspectival dimensions. This paper extends the data analysis to the results for two subgroups of families which have a child with Down syndrome, from two larger questionnaire studies (Scorgie, Wilgosh, & McDonald, 1997; Wilgosh, Scorgie, & Fleming, 2000). The purpose was to examine effective life management for these families, a sufficiently large and identifiable subgroup in each of the two surveys, to allow examination of consistency of findings for these families compared to the broader family data. The findings indicated similar dimensions of life management for such families, and important transformational outcomes, all of which have implications for parents of children with Down syndrome and the professionals with whom they interact.

Research is inconclusive as to the presence and effect of stress on families of children with Down syndrome. In a study of family stress and adjustment in three groups of

parents, Sander and Morgan (1997) reported that stress levels for parents of children with Down syndrome were greater than those of parents of developmentally normal children, but less than for parents of children with autism. Roach, Orsmond, and Barratt (1999) also noted that parents of children with Down syndrome reported significantly higher stress and depression than parents of typically developing children, though not at a level considered clinically significant. Atkinson and Chisholm (1995) reported that those mothers of children with Down syndrome who tended to focus on stressors experienced greater affective distress than mothers who chose alternate coping strategies. This may suggest that outcome is not determined by the presence of stress but, rather, is influenced by how that stress is perceived and managed by the individual and family unit.

In fact, other research has shown that, even amid the stresses of raising a child with Down syndrome, many families manage life effectively (e.g., Cahill & Glidden, 1996; Roach et al., 1999). Cahill and Glidden (1996) compared parents of children with Down syndrome to parents whose children had other disabilities (e.g., autism, cerebral palsy, and seizure disorders) and found no significant differences between the families on measures of family functioning, also discovering that family functioning scores for the large majority of families of children with disabilities (including adoptive families [Glidden & Cahill, 1998]) fell within the norms for families in general. Likewise, in a study of family stress, comparing families of children with Down syndrome, hearing impairment, and developmental delay, with two control groups (nondisabled), Duis, Summers, and Summers (1997) found stress levels for parents of children with Down syndrome were similar to those of the two-parent control group. Furthermore, these scores were significantly lower than stress scores for parents of children with hearing impairment and developmental delays, and single parents of children without disabilities. The above studies suggest that many parents are able to effectively manage the stresses associated with parenting a child with Down syndrome. In fact, many families manage life very effectively when they have a child with Down syndrome or other disabilities.

In interviews with parents of children with Down syndrome and other disabilities, Stainton and Besser (1998) documented nine areas in which children with intellectual disabilities made a positive impact on their families. These included joy and happiness, an increased sense of purpose and priorities, expanded personal and social networks, increased spirituality, family unity, personal growth/strength, and increased understanding of and tolerance for individual differences. Skinner, Bailey, Correa, and Rodriguez (1999) documented transformations in Latino mothers of children with special needs, which included new ways of thinking about the world, a focus on the character-building aspects of suffering, and becoming more compassionate mothers and people.

Parents of children with Down syndrome have long asserted that, not only have they been

able to cope effectively with the stresses of their unique parenting situations, but also they have been changed positively and permanently as a result of their parenting experiences. Although professional literature has given little attention to parental transformation in response to a child's disability, parents' own accounts of their lives and relationships with their children provide frequent reference to transformation. Transformations have been discussed by parents of children with a wide range of disabilities (e.g., Oe, 1996), but parents of children with Down syndrome have provided some of the most compelling and articulate accounts (e.g., Beck, 1999; Meyer, 1995; Rogers, 1953, 1981).

Dale Evans/Rogers (Rogers, 1953), US actress and country singer, provided a brief but early insight into family transformation. In writing *this is the story of what a baby girl named Robin Elizabeth accomplished in transforming the lives of the Roy Rogers family* (p.7), she opened a discussion on transformation that has continued for the following half century. Robin Elizabeth, who had Down syndrome, only lived two years, but Rogers' book describes a family that was changed forever. In fact, through her mother's book, Robin Elizabeth's influence might be seen as having much broader impact. Prior to the 1950s, having a child with a developmental disability was generally considered to be an unspeakable topic. Rogers was one of three prominent women who changed that. Her open discussion of the subject in *Angel Unaware*, along with that of Pearl S. Buck and Rose Kennedy, broke a powerful social taboo that isolated families, and transformed society forever. Rogers' transformation was clearly religious in nature. Robin Elizabeth (an angel) tells God about her parents' transformation: *They're a lot stronger since they got our message. There's a new glory inside them and on everything all around them, and they've made up their minds to give it to everyone they meet* (Rogers, 1981, p. 94).

While the strong religious nature of *Angel Unaware* is shared by many parents' stories of transformation (e.g., Beck, 1999), others are more secular. Michael Bérubé's *Life as we know it* (1996) provides a secular, humanistic perspective and discusses *genetic destiny* (p. 3), describing his initiation into parenting a son with Down syndrome as a starting place for social criticism. Bérubé's opinions on social issues have not altered greatly as a result of his experience, yet certain indelible changes have been made. He suggests that physicians who only warn of the negative aspects of having a child with a disability perpetuate a dangerous bias. He feels strongly that the other side should be presented as well. *The message: if you choose to have this child, your life may become richer and more wonderful than you can imagine, and your child will grow to be a loving, self-aware, irreplaceable member of the human family* (p. 82). Barbara Gill's (1997) *Changed by a Child* also addresses transformations in general and her personal transformation after her son, Amar, was born with Down syndrome. The meditation, *Blessing*, concludes, *Let me be thankful for this doorway to meaning. Let me have the courage to walk through it. Let me choose it now* (p.229).

Gill's notion of choice seems to be shared by other parents of children with Down syndrome, in discussing their transformations. Fate thrust these children into most of the parents' lives without an opportunity for choice. Yet, many of these parents feel that they have made a choice, freely and fully, to accept the path on which fate placed them. They chose to reconstruct their lives to fit their children rather than to struggle to make their children fit their old lives.

One parent who had the opportunity to choose was Martha Beck. Her book, *Expecting Adam* (1999), chronicles the choice that she and her husband faced when these young Harvard graduate students were informed that the baby she was expecting had Down syndrome. Her doctors and the professors who were grooming them for elite careers made it clear that there would be no place in that life for a child with a disability. Eventually, they followed their hearts and their child, and let go of the dreams that they had worked so hard and long to achieve. According to Martha Beck, it was the best thing that ever happened to them.

Clearly, then, stress and its management are not the primary variables in discussing life adaptation of families which have a child with Down syndrome. Rather, based on the research and general literature, these families appear to have positive coping skills and effective life management strategies. Individual parents have reported significant personal and family transformations, which they have attributed directly to the birth of their child with Down syndrome.

Our research has examined three aspects of effective life management in parents of children with a range of disabilities across a broad age range: strategies parents find helpful for managing life effectively, personal characteristics parents consider essential to life management, and transformational outcomes experienced by parents. The initial, parent-interview study (Scorgie, Wilgosh, & McDonald, 1996) identified nine themes, subsequently validated through two questionnaire surveys. The first survey (1996; see Scorgie, Wilgosh, & McDonald, 1997) involved parents of children with disabilities who were judged to be effective at life management. The second survey (1998; see Wilgosh, Scorgie, & Fleming, 2000) involved a somewhat broader sample of parents of children with disabilities, who were contacted through service agencies but not identified or pre-selected as effective life managers. The purpose of the two survey studies was to explore and validate the nine themes, beyond the findings of the initial, interview study.

The purpose of the data analysis reported here was to examine effective life management for families of children with Down syndrome, who formed a sizeable subgroup from our survey research, to examine consistency of their questionnaire results with the results across families of children with a range of disabilities. As indicated above, there is a fair

body of research and individual documentation on such families, supporting such a subroup analysis.

Method

Participants. Parents of children with Down syndrome in the two studies totaled 53: 39 (74%) mothers, 11 (21%) fathers, two (4%) foster parents, and one (2%) guardian. Twenty-nine parents (23 mothers, five fathers, and one guardian) were part of the first study (good life management), and 24 parents (16 mothers and eight fathers), representing 18 families, took part in the second study (broader parent sample). All parents/guardians resided in Western Canada.

All participants in the first survey, including the Down subgroup, were nominated by personnel from one of four service agencies for such families in Western Canada, as having effective life-management strategies (see Trute & Hauch, 1988, for similar subject selection). Participants in the second survey (not pre-selected as effective life-managers) were contacted through four different service agencies, eliminating possible overlap of families contacted for the first survey. After university ethical approval of the research, the cooperating agencies mailed questionnaires to prospective participants, along with a cover letter assuring confidentiality, return envelope and postage. For survey studies one and two, the overall response rates were 80 of 198 mailed surveys (42.3%) and 116 of 381 (22.3%), respectively. Because t-tests revealed few significant differences (on only two of 59 LMS items), the data were pooled for all families of children with Down syndrome, for all subsequent data examination and discussion.

Forty-five respondents (84.9%) represented dual-parent homes and 38 (71.7%) lived in urban settings. Thirty-two (62.7%) of the children with Down syndrome were males, 19 (37.3%) were females. Of the 51 children with Down syndrome contained in the 47 represented families, five children (9.8%) was between 0-5 years of age, 22 children (43.1%) were between 6-12 years, 13 children (25.5%) were between 13-21 years of age, and 11 (21.6%) were over 21 years of age ($\underline{M}$ = 15.0 yrs).

The Life Management Survey (LMS). The LMS (Scorgie et al., 1997) is a 59-item instrument designed to explore three aspects of life management in parents of children with disabilities: effective management strategies (Questions 1-31), effective parent characteristics (Questions 32-43), and positive transformational outcomes (Questions 44-59). (The original survey instrument was expanded in 1998 to include two additional items about vocational transformations; these were not strongly endorsed by parents and will not be discussed further.) Opportunities for open response comments were provided at the end of each survey item and at the conclusion of each of the three survey sections.

Results

For each of the three aspects of effective life management, i.e., strategies employed,

personal qualities, and transformational outcomes, three themes had been identified in earlier, qualitative research (Scorgie, Wilgosh, & McDonald, 1996). Only those survey items ranked *very important* or *essential* by the majority of parents of children with Down syndrome (i.e., with mean scores of 4.0 or above) will be reported, with examples from parent written comments..

Important Parent Strategies

Participants were requested to indicate how important each of the 31 strategies has been to them as a parent of a child with special needs. Strategies dealt with reframing, balancing roles and responsibilities, and gathering resources.

Theme 1: Reframing. Several strategies emerged as strongly important or essential to effective life management. Parents felt that learning to accept their children *as they are* was vital to managing life (M = 4.4, SD = .99). Parents generally agreed that acceptance was a prerequisite to a positive outlook on life (e.g., *Acceptance brings out the best and invites growth*). Parents also viewed such strategies as valuing what their children contribute to their families (M = 4.4, SD = .77), and taking into account the child's goals and dreams (M = 4.3, SD = .71) as very important or essential to effective life management. Parents noted that their children bring such traits as joy, care, love of life, and sensitivity toward others to their families and larger communities (e.g., *Amy has an incredible gift of welcome; she prays often for people who are hurting and loves them*). A second group of strategies pertained to how parents view themselves. These parents asserted that developing skills to advocate self-confidently on behalf of their children (M = 4.3, SD = .84) and trusting their own instincts (M = 4.3, SD = .86) were essential to effective life management. While parents strongly asserted that they really do know what is best for their children and have had to learn to value their own judgments accordingly, they also affirmed that they needed the expertise and support of child-focused professionals to provide optimal programming options for their children (e.g., *I need the facts more trained/experienced personnel can give*).

Theme 2: Balancing roles and responsibilities. Two strategies were strongly endorsed by parents related to balancing their various roles and responsibilities: safeguarding their marriages and nurturing themselves. Safeguarding marriages by spending time together, learning to communicate openly, and creating mutual ownership of family problems and solutions was ranked high (M = 4.3, SD= .73). While parents admitted that a healthy marriage was foundational to family well-being, several respondents stated that it tended to be difficult to carry out in practice (e.g., *Very easy for husbands and wives to forget about their own relationship, which is foundational to everything else*). Parents also agreed that safeguarding their own physical and emotional health (M = 4.0, SD = .92) was a very important strategy for effective life management (e.g., *Although I have*

focused on our son's progress to a fanatical degree, my other hobbies and interaction have provided the balance). Parents affirmed that strategies, such as setting limits on external expectations (M = 4.0; SD = 1.0), and balancing time, attention and energy between all children in the family (M = 4.0, SD = 1.0)(e.g., *Giving each child quality time was/is key*), were very important to effective life management.

Theme 3: Utilizing resources. Although parents indicated that learning how to collaborate with professionals was important (M = 4.0, SD = .81), several mentioned that it required a great deal of energy and patience to deal with the highly structured bureaucracies many professionals represent. Parents stated that, while they value and need the expertise of professionals (e.g., *You need excellent [professionals], caring and communicating with you*), they resent professionals who assume parents are uninformed or unable to make appropriate decisions for their children (e.g., *Some professionals think they know more than parents. . . not so*).

Important Parent Characteristics

The LMS was designed to examine three categories of personal characteristics: personal traits, decision-making and problem-solving ability, and philosophy of life/belief system. Parents were instructed to indicate how important each of the twelve personal characteristics has been to them as a parent of a child with special needs (1 = *not important*; 5 = *essential*).

Theme 4: Personal traits. Four parent traits were considered very important or essential by over 70% of respondents. Maintaining a positive outlook (M = 4.3, SD = .66) was foundational to achieving optimal child outcomes for many parents. Some parents found that viewing their child as capable served as a self-fulfilling prophecy (e.g., *Our positive outlook about expectations paid off, as our son has great language ability*). A second highly valued parent trait was patience (M = 4.2, SD = 1.0) (e.g., *What appears to be impossible has often happened when patience and expectation are teamed up appropriately*). Willingness to grow and learn also ranked as very important or essential for the large majority of parent participants (M = 4.2, SD = .74). Several parents remarked that the need to keep abreast of current best practices has necessitated that they continue growing and learning (e.g., *Our son's development has depended on our knowledge*). A fourth foundational parent trait was determination (M = 4.1, SD = .79). Parents equated determination with refusing to give up, or persisting until an acceptable outcome is achieved (e.g., *Determination is the difference between reaching a goal and falling short; it finds answers when others say there are none--and so progress comes about*).

Theme 5: Decision-making and problem-solving ability. None of the survey items in

this category received a mean score of 4.0 or greater. While most parents accepted that they will remain major decision-makers for their children throughout their children's lives (e.g., *I accept that my daughter may always need some kind of support throughout her life*), several reported feeling overwhelmed by this reality (e.g., *This is not something I relish*). Many hoped that, over time, their children would become more active in decision-making processes.

Theme 6: Personal belief system/philosophy of life. Approximately 90% of the respondents considered the belief, *life is what you make it; you have a choice about how you will live life,* as very important or essential for effective life management (M = 4.7, SD = .62). Respondents indicated that, to avoid frustration, they have also had to learn to accept the many variables in their lives over which they have little or no control. However, for many parents the more important strategy was finding solutions (e.g., *Instead of asking 'Why me?' I ask, 'How am I going to handle this?'*). These parents also valued having strong personal convictions (M = 4.0, SD = .86). For some parents, reliance on strong inner faith/religious convictions was valuable; for others, belief in one's child or one's own inner strength was important (e.g., *There will always be issues where you question yourself. Therefore, staying focused and going with gut feelings are important*).

Transformational Outcomes

Parents ranked degree of personal agreement/disagreement for 16 transformational outcomes (1 = strongly disagree; 5 = strongly agree).

Theme 7: Personal transformations. Four personal transformations were rated highly by parents. Parents felt that they had learned to speak out for their children, rather than remain passive (M = 4.4, SD = .77) (e.g., *I didn't have the confidence to ask questions in a group or meeting; needing to advocate changed that*). Parents also described themselves as more compassionate toward others, especially those in need (M = 4.2, SD = .74). Another personal transformation that occurred was the discovery that they could achieve, rather than remain powerless (M = 4.3, SD = .71). One father commented, *Watching [my child] achieve things never thought possible to her challenges me to get with it!* Parents also felt that their parenting experience had made them stronger, rather than weaker (M = 4.0, SD = .75).

Theme 8: Relational transformations. Two relational transformations were rated highly by parents, who agreed that they have learned to see life from a different perspective, learned what it is like to live in someone else's shoes (M = 4.1, SD = .81). One respondent remarked, *One thing it has [taught me] very strongly is that comparisons can be set aside and everyone can be enjoyed for who they are!* The second relational

transformation rated highly was knowing that they had made a difference in the life of another person through advocacy (M = 4.0, SD = .79). Parents spoke of writing letters and pamphlets, leading parent groups, and advocating changes to school, church and community programs. One mother shared her hope that, because she had made a difference in the life of her child, her child would someday be able to make a difference in the life of another. She wanted to give her child the *gift* of knowing that she, too, had made a difference.

Theme 9: Perspectival transformations. Parents agreed that parenting a child with Down syndrome has given them a more authentic view of what it means to be successful in life (M = 4.0, SD = .87). One parent summed up the perceptions of several others with the comment: *Success had been measured by accomplishment and material wealth. I now view success as having quality of life, of being accepted for who I am and of well-being and friendship.* Parents also agreed that they have learned what is really important and valuable in life (M = 4.1, SD = .83). Parents cited such values as to love, to be loved, to accept others nonjudgmentally, to be needed, to respect and cherish life, and to help others.

All of the above findings are consistent with the overall results for the two surveys, as previously reported (Scorgie et al., 1997; Wilgosh et al., 2000). This is, perhaps, not surprising given that the parents of children with Down syndrome represent a subset of the total sample. However, it does affirm that these parents, and many other parents of children with disabilities, demonstrate effective life managment strategies which are not unique to parents identified by service agencies as effective life-managers, consistent with the research cited above (e.g., Cahill & Glidden, 1996; Glidden & Cahill, 1998). Further research is needed to examine life management when parents are not connected to a service network.

Discussion and Implications

The fact that there was agreement among parents from both surveys on the effectiveness of a large majority of life management strategies might suggest that there are a set of strategies that are important to parents of children with Down syndrome across the board. These parents felt that accepting and validating their children, and valuing what they contribute to their families and to the community, were very important to effective life management. Parents also supported the need to trust their own instincts, to advocate self-confidently, to work collaboratively with professionals, to safeguard their marriages, and to nurture their physical and emotional health. These strategies suggest implications for effective intervention with parents of children newly diagnosed.

Parents indicated that they needed support for and recognition of the importance of their

parenting role from the professionals with whom they interact. They especially valued professionals who value their children, view them as unique individuals, and collaborate with families as members of a team, rather than those who see them as a *case* to manage. Unfortunately, many parents expressed negative perceptions of professionals, especially those who were arrogant, critical, insensitive, or entrenched in one-way thinking. Clearly professionals as a group need to be aware of the possible negative image of professionals that parents may bring to parent-professional interactions. Perhaps some professionals should be challenged as well to examine their perceptions of parents.

Given the literature on the demands and stresses of parenting a child with a disability, the encouraging finding is that parents acknowledge positive benefit. The large majority of parents in both subgroups indicated that they have changed permanently and positively through their parenting experiences; many were adamant that the changes they have experienced were directly linked to their experiences of parenting a child with Down syndrome.

Research contends that life events that come suddenly, affect many life domains, and challenge one's basic assumptions about life, often result in transformations (Aldwin, 1994; Janoff-Bulman, 1992; Palus, 1993). Some researchers even profess that these permanent changes in self-perception, behavior, or outlook on life, may be necessary to resolve a crisis positively. Though references to positive parent transformations are found in the writings of parents of children with disabilities, the professional literature is just beginning to document and validate them.

The results of this research indicate that transformational outcomes do, indeed, take place in the lives of parents of children with Down syndrome. This was true for two subgroups of parents, those selected as having effective life management strategies, and those more broadly identified from having had some contact, however brief, with a service agency. Surely this has implications about the way disability is presented and represented to parents of children newly diagnosed. A limitation of both LMS studies lies in the fact that a broad base of families, including those falling outside of the scope and range of service providers, has not been represented in the findings. From difficulties such families may be experiencing further information could be gleaned on needs of families and issues related to life management strategies.

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Footnote

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INTEGRATING STUDENTS WITH SPECIAL NEEDS IN HONG KONG SECONDARY SCHOOLS: TEACHERS' ATTITUDES AND THEIR POSSIBLE RELATIONSHIP TO GUIDANCE TRAINING

Mantak Yuen
and
Peter Westwood
The University of Hong Kong

At the present time, Hong Kong schools are moving gradually toward integration and inclusive education. Previous studies suggest that when students with special needs are integrated successfully in regular classrooms the success is largely dependent upon positive attitudes of the teachers. This study assessed the attitudes towards integration exhibited by teachers in a sample of typical Hong Kong secondary schools. The participants comprised of 345 teachers from 39 secondary schools. Results suggested that the teachers did not hold particularly favourable or supportive attitudes towards the policy of integration. While the majority supported the underlying principle that it is every child's right to learn in a regular classroom, most were uncertain about the actual practicalities of such placement. In particular, negative attitudes were expressed concerning the feasibility of integrating students with behavioural problems, and those with severe visual or hearing difficulties or with mental handicaps. More positive attitudes were expressed towards integrating students with physical disabilities and those with mild health or speech problems. When teachers with guidance training were compared with those without it, the results showed that teachers with guidance training generally held more positive attitudes towards integration.

In most developed countries over the past two to three decades there has been a significant trend towards placement of students with special educational needs in mainstream schools

rather than in segregated special schools and special classes. This move has been referred to variously as *integration*, *mainstreaming*, and more recently, *inclusion*. The terms *integration* and *mainstreaming* are virtually synonymous, referring to the placement of a student with a disability or difficulty into ordinary school environment and regular curriculum, but usually without that curriculum being modified to any great extent. The student usually receives some additional support to help him or her do the required work in the classroom, but the intention is very much to make the student fit the programme rather than adapting the programme to suit the student. The term *inclusion*, on the other hand, refers to a much more radical model. It implies that the regular school curriculum, teaching methods, organisation, and resources need to be adapted quite significantly to ensure that all students, regardless of ability or disability, can participate successfully in the mainstream of education (Mittler, 1995).

Integration and inclusion: the rationale

The basic premise of the integration/inclusion movement is that principles of anti-discrimination, equity, social justice, and basic human rights make it imperative that students with disabilities and special needs should enjoy the same access as all other students to a regular school environment and to a broad, balanced and relevant curriculum (Knight, 1999; OECD, 1999; UNESCO, 1994). It is believed that integration in the mainstream enables students with disabilities to benefit from the stimulation of mixing with relatively more able students and having the opportunity to observe higher models of social and academic behaviour (Elkins, 1998). Earlier research also suggested that there was no clear advantage in segregated special education for students with milder forms of disability, and that they progressed as well (and sometimes better) socially and academically as in regular classrooms (e.g. Dunn, 1968; Wang & Baker, 1986).

This move towards integration began tentatively in a few countries as long ago as the late 1960s and early 1970s, but the trend became much more vigorous on an international scale in the 1980s and throughout the 1990s. A major factor influencing the rapid worldwide movement towards inclusion was the promulgation of the *Salamanca Statement and Framework for Action on Special Needs Education* (UNESCO, 1994). This Statement recommends, *inter alia*, that all students with special needs should have full access to regular schools and be taught in classrooms using predominantly adaptable and child-centred pedagogy.

The situation in Hong Kong

The Education Department in Hong Kong had subscribed to the principle of integration since the 1970s (Hong Kong Government, 1995; Lo, 1998), but for many years the progress in this direction was fairly slow. Any integration of students with disabilities that occurred was very much on an *ad hoc* and informal basis (Salili, 1999). Wong, Pearson, Ip, and Lo (1999) have pointed out that the integration occurring at that time was often due mainly to the personal initiative and persistence of individual parents who insisted that their child with

a disability attended the local school, rather than as the result of any systematic implementation of an existing policy. Since 1997, however, the Education Department has been much more active in supporting a growing number of schools willing to integrate students with mild disabilities (Hong Kong Education Department, 1997). These students included some with mild intellectual disability, some with impaired hearing or sight, and others with mild autism. At the time of writing, this *Pilot Project in Integration* is entering its fourth year.

A recent official document on proposed wide-ranging educational reforms in Hong Kong (Education Commission, 2000) includes a much stronger commitment in the coming years to the implementation of a policy of integration and inclusion. Some reference is made therein to what appear to be fairly promising outcomes from the Integration Pilot Project, and the intention to expand the programme to include 40 schools by the year 2001. Attention is also drawn, however, to the clear evidence that ... *many teachers still lack confidence in mastering the skills in caring and catering for students' diverse learning needs* (Education Commission, 2000, p. V-3). Much comment is made in the document on the need for all teachers to recognize and accommodate students' individual abilities and differences through the use of more adaptive and inclusive teaching practices. The fact that teachers do not find this type of adaptive teaching style easy to implement is not unique to Hong Kong, and has been reported widely in the international literature (e.g. Fuchs & Fuchs, 1998; Hart, 1996; Schumm & Vaughn, 1995).

If the proposed educational reforms are enacted, teachers in Hong Kong's mainstream schools must expect not only to have to alter their teaching approaches to become more student-centred, but also to encounter more students with disabilities and difficulties in their classes over the next few years. It must be noted, however, that the Hong Kong Education Department, while encouraging and supporting the placement of students with mild to moderate disabilities in regular schools, still intends to retain a range of special schools to meet the needs of those students with severe and complex disabilities who simply cannot cope with the environment or curriculum of the ordinary school. In other words, Hong Kong is not intending, at this stage, to implement a policy of *full inclusion* and is not suggesting that all students, regardless of ability or disability, should attend their local school.

Integration and inclusive practice: Demands on teachers

If integration and inclusion are to be successful, one clear condition is that teaching methods and curricula will need to change in order to accommodate the diversity of students to be included in the average classroom (Wong et al., 1999). The reforms proposed by the Education Commission certainly suggest that all students would benefit from a move toward more student-centred approaches in teaching and much greater flexibility in curriculum planning. Such a change, if it occurs, will certainly make it more feasible for students with special needs to receive an education geared to their abilities. A prerequisite for any such change will be a willingness on the part of teachers to expend the necessary

time and effort to plan, teach and organize in different ways to accommodate students' differences and unique needs (Blamires, 1999). Forlin (1998, p.96) has observed that ... *policies of inclusion rely on teachers' acceptance of them, belief in their worth, and an ability to cope*. In other words, the feasibility and efficacy of integration and inclusion in Hong Kong will be influenced very significantly by teachers' own beliefs and attitudes.

The importance of teachers' beliefs and attitudes

It is now well established that teachers' beliefs and attitudes concerning students with special needs have a very powerful influence on their expectations for the progress of such children in mainstream schools (Deisinger, 2000; Minke, Bear, Deemer & Griffin, 1996; Odom, 2000; Scruggs & Mastropieri, 1996). It is even argued that successful integration is only possible where teachers display reasonably positive and accepting attitudes towards students with special needs and to the basic principles of inclusion (Beattie, Anderson & Antonak, 1997; Freagon & Kachur, 1993; Giangreco, 1996).

Teachers' attitudes and beliefs are known to influence their teaching practices and management strategies in the classroom, and therefore to directly influence students' learning (Garvar-Pinhas & Schmelkin, 1989; Nader, 1984; Smith, 2000; Winter, 1995). In particular, a teacher's beliefs about the learning capacity of a student with disability may determine the extent to which the teacher is willing to make adjustments to teaching method, curriculum, or classroom organization, or indeed whether he or she even recognizes that some students in the class do have special needs (Fields, 1995; Salili, 1999; Westwood, 1995). It is now generally accepted that teachers who are required to integrate students with disabilities into their classes must feel confident in their own ability to cope with the situation, and must have some positive expectations about the students' learning potential (Forlin, 1998; Webster, 1999). Teachers should also have some degree of empathy with students who have special needs. Ideally, teachers need to be in possession of relevant interpersonal skills for relating to students with learning or behavioural problems, and for providing some elements of guidance and counselling when necessary, -the *caring* aspect of the teaching role referred to by the Education Commission (2000, p. V-3).

Teachers' attitudes towards integration and inclusive practices have been studied in many parts of the world, commencing as early as the 1950s (see Scruggs & Mastropieri, 1996 for a detailed review). Recent studies include those of Avramidis, Bayliss, & Burden (2000), Beattie et al. (1997), Forlin (1995), Forlin, Douglas, & Hattie (1996), Reiter, Schanin, & Tirosh (1998), Smith (2000), Soodak, Podell, & Lehman (1998), Ward, Centre & Bochner (1994), and Wei & Yuen (2000). Among the findings from such studies has been evidence that, when first confronted with the prospect of integrating students with disabilities in their own classes, teachers tend to be somewhat negative and uncertain about their own ability to cope, and they often point to lack of personal experience and relevant training (Scruggs & Mastropieri, 1996; Smith, 2000; Vaughn, Schumm, Jallard, Slusher, & Saumell, 1996). Deisinger (2000) points out that many teachers would not have had direct personal contact

with students who have disabilities, and therefore their own beliefs and attitudes tend to be based entirely on common myths prevalent in the community and on stereotypes presented in the media. Deisinger (2000, p.307) observes, *If a non-disabled person has only minimal knowledge about disability, he or she is likely to formulate opinions of individuals with disabilities on the basis of previously held beliefs*. Such beliefs may be either unreasonably negative or unrealistically positive. For example, inexperienced teachers with minimal contact with students with disabilities are often more positive and optimistic about the prospects of integration than are the more experienced teachers (Forlin, 1998). Although one of the strategies most frequently recommended for improving teachers' attitudes is to have them gain more firsthand experience in working with students with special needs, increased contact in integrated settings does not always result in improved attitudes or confidence in regular school teachers (Crawford, Heung, Yip, & Yuen, 1999).
Studies have also shown that attitudes and confidence of teachers vary significantly according to the type and severity of a student's disability (Avramidis et al., 2000; Ward et al., 1994; Westwood & Graham, 2000), with emotionally and behaviourally disordered students commonly regarded as the most problematic and a potential source of teacher stress (Forlin, 1995). Teachers appear to be more willing to integrate students with mild disabilities, rather than those with more severe disabilities and with challenging behavioural problems.

Naturally, there are great variations and individual differences in teachers' beliefs, attitudes and confidence in moving toward inclusion (Scruggs & Mastropieri, 1996). It may be that the nature of their work in particular schools better equips some teachers than others to deal with students' individual differences and special needs. For example, teachers already involved in school guidance and counselling may have developed greater understanding of individual needs and how best to deal with them. They may have acquired expertise to enable them to establish helping relationships with students, and may already appreciate the importance of supportive school environments.

Teachers' role in guidance in Hong Kong schools

Teachers who are involved in guidance and counselling work in schools may already possess some of the interpersonal helping skills and positive attitudes towards students with special needs regarded as essential to facilitate integration and inclusion. In Hong Kong schools, guidance personnel, such as school social workers and school psychologists, provide specific support services to students with learning, emotional and behavioural difficulties. In addition, most secondary schools have specifically identified *guidance teachers*, who are full-time teachers given the duties of managing and developing the general guidance programme and providing guidance and counselling to students in school (Hong Kong Education Department, 1986; Hui, 2000; Hui & Chan, 1996). Apart from this, *all* teachers are expected to be involved to some extent in guidance work. This *whole school approach* and shared responsibility for guidance aim to create a nurturing and supportive environment for all students (Hong Kong Education Department, 1990; Hui, 1994).

Although guidance is regarded as an essential part of a teacher's role, many teachers do not appear to have had any training in guidance during their teacher-education programmes. To compensate for this, short courses and seminars are run for guidance teachers by the Education Department of Hong Kong (Hong Kong Education Department, 1999). The tertiary institutes also run four one-year part-time certificate programmes for secondary school guidance teachers. About 58% of the guidance team leaders and 20% of the guidance team members have been trained at the certificate level (Luk Fong & Lung, 1999).

If there is indeed any relationship between attitude towards integration and a teacher's skills or lack of skills in the guidance area, it should be possible to explore this relationship in the Hong Kong school environment. Given that some teachers have received training in guidance principles and strategies and others have not, it should be possible to assess the effect that such training has on teachers' willingness to accept integration and to feel positive about its potential benefits.

A thorough review of the extant research literature on inclusion and school guidance failed to reveal any empirical data comparing the attitudes of guidance personnel with those of other teachers towards integration policies and practices in secondary school settings. This study aimed to fill this gap by assessing and comparing the attitudes of teachers with guidance training and those without guidance training in Hong Kong through a survey of secondary schools.

The research questions

This study attempted to obtain data to answer the following questions:

1. To what extent do Hong Kong secondary school teachers believe in and support the general principle of integration of students with special needs in regular classrooms?
2. Do secondary school teachers' attitudes and beliefs about integration vary according to the type and severity of a student's disability or difficulty?
3. Is there a difference in attitude towards integration between teachers with guidance training and teachers without such training? (*Guidance training* refers to whether the teacher has completed at least a one-year part-time training course in guidance and counselling.)

Method

Participants

The sample was drawn from 50 typical secondary schools located in various parts of the territory. The participants comprised of 345 teachers (131 males; 203 females; no data on gender for 11 subjects). Table 1 shows the frequency distribution of the main demographics, relative to the teachers' guidance status and training, and special education training. Data indicated that 36.2 % of the sample were guidance teachers. The main subjects taught by the teachers in the sample were: English Language, 18.7%; Chinese Language, 22.0%; Mathematics, 14.0%; Humanities and Social Studies, 22.3%; and Science subjects, 10.3%.

Within the sample, 79 teachers had between 1 year to 5 years of teaching experience, and 263 teachers had 6 or more years (Mean teaching experience: 11.34 years, *SD* = 6.92). Only 19.1% of the teachers had received guidance training of a year or more, and only 2.7% of teachers had received any special education training. Table 1 shows this information and also indicates the qualifications held by teachers in the sample.

Table 1
Demographics, Guidance Training, Special Education Training, and Guidance Status

	Teachers (n=345)	
Demographic	n	%
Gender		
Male	131	38.0
Female	203	58.8
No Response	11	3.2
Guidance Training		
Yes	66	19.1
No	279	80.9
Special Education Training		
Yes	6	1.7
No	339	98.3
Degree@		
BS/BA + PCEd/Bed	229	66.4
BS/BA	47	13.6
Teacher Cert	54	15.7
Guidance Status		
Guidance teachers	125	36.2
Non-guidance teachers	220	63.8

@Note. Some respondents have other qualifications such as Diploma from tertiary institutes, so the total number of respondents under *Degree* is less than 345.

Procedures

Questionnaires and letters were sent to each school inviting 10 teachers (3 guidance teachers and 7 non-guidance teachers) to participate. A total of 39 schools responded positively and returned the completed questionnaires. The overall response rate was 69.6%. The questionnaire contained specific items to assess teachers' attitude towards the basic principles of integrated education, components to assess their attitude towards the feasibility of integrating different types of disability or difficulty, and a section for respondents to provide relevant personal details.

The instrument: Chinese Attitudes Towards Mainstreaming Scale (C-ATMS)
The 19-item scale used in this study was adapted from the *Attitudes Towards Mainstreaming Scale* (ATMS) (Berryman & Neal, 1980; Berryman, 1989) and translated into Chinese. The items were translated by the principal researcher and checked by an independent translator to confirm accuracy of meaning. Any doubtful items were further modified until clarity was achieved. One new item, relating to integration of children with *autistic features*, was specifically added due to the fact that such students are sometimes integrated in mainstream schools in Hong Kong. The draft questionnaire was piloted with a group of in-service teachers taking a postgraduate course in Education in a university. Based on their feedback, the wording in some items was further refined for clarity.

Of the 19 items in C-ATMS, 15 required the teachers to read a statement concerning integration of students with different types of disability or difficulty (from mild to severe) in regular mainstream classrooms. For example, the statement might be *Visually handicapped students who can read regular standard printed material should be in regular classrooms.* Or, *Students with behaviour disorders who cannot readily control their own behaviour should be in regular classrooms.* Another four items focus on basic principles underpinning the inclusive education philosophy (e.g. the belief that all students have equal rights to access mainstream education; the desirability versus the feasibility of teaching students with diverse abilities in the same classroom, the proven success of integration, etc). Each respondent was asked to register his or her level of agreement with each statement using a 6-point Likert-type scale for each item, with 1 representing *strongly disagree*, 2 representing *disagree*, 3 representing *mildly disagree*, 4 representing *mildly agree*, 5 representing *agree*, and 6 representing *strongly agree*.

In order to classify the teachers' attitudes as revealed in the C-ATMS responses the following cut-off ranges were established:
Positive Attitude = Mean Score between 3.76 to 6.00 on the questionnaire.
Uncertain or neutral attitude = Mean Score between 3.25 and 3.75.
Negative Attitude = Mean Score between 1.00 and 3.24.

For the original version of ATMS, Berryman and Neal (1980) report internal consistency coefficients of .89 and .88 for two samples, which can be taken as indicating adequate reliability for the whole scale. The factor-structure and reliability of the modified scale is reported elsewhere (Yuen & Westwood, 2000).

Results
Table 2 was constructed using the cut-off points described above for categorizing positive, negative, and uncertain beliefs and attitudes. The mean responses from the questionnaire are presented in rank order, from the most positive to the most negative. The teachers had been asked to record the extent of their agreement or disagreement with statements concerning students with varying degrees of disability or special need, and with four basic principles of integration philosophy.

Table 2
Teachers' Attitudes towards Integration

Rank	Item nos. & topics *Attitudes*	Mean N=309	SD
Top	*Positive*	*(3.76-*	*6.00)*
1	15. Integrate students with diabetes	4.83	0.83
2	10. Integrate physically handicapped (not confined to wheelchairs)	4.71	0.97
3	12. Integrate students who stutter	4.70	0.95
4	2. Every student's right in regular classroom	4.43	1.12
5	14. Integrate students with epilepsy	4.32	1.11
6	9. Integrate physically handicapped students (confined to wheelchair)	4.31	1.18
7	5. Integrate students with visual impairment (can read standard printed materials)	4.09	1.02
	Uncertain	*(3.25-*	*3.75)*
8	13. Integrate students with speech difficulties	3.60	1.28
9	7. Integrate students with hearing problems (not deaf)	3.53	1.25
10	11. Integrate students with cerebral palsy (can control limbs)	3.39	1.18
11	19. Integrate students with autistic features	3.38	1.34
12	1. Integrated education is a desirable education practice	3.28	1.08
	Negative	*(1.00-*	*3.24)*
13	18. Integrated education will prove to be successful in practice	3.14	1.11
14	17. Integrate students with persistent discipline problems	3.08	1.22
15	4. Integrate students with mild mental handicap	3.06	1.09
16	16. Integrate students with significant behaviour problems	2.79	1.18
17	6. Integrate students with visual impairment(can't read regular standard printed materials)	2.51	1.00
18	8. Integrate students with deafness	2.50	1.13
19	3. It is feasible to teach the gifted, normal,and mentally retarded in the same classroom	2.41	1.12
Bottom			

Note. Rating on 6- point Likert scale, 1=Strongly Disagree, 2=Disagee, 3=Slightly Disagree, 4=Slightly Agree, 5=Agree, 6=Strongly Agree;
Items arranged in descending order of their mean scores.
Items, except 19, were adapted and translated from the *Attitude Towards Mainstreaming Scale*(ATMS) devised by Berryman & Neal (1980).

Research Question 1: *To what extent do Hong Kong secondary school teachers believe in and support the general principles of integration of students with special needs in regular classrooms?*

The specific questions dealing with the general principles of integration were: 1, 2, 17, and

23. The results summarised in Table 2 indicate that the only principle about which the teachers felt very positive was the basic premise that *all students have the right to be educated in regular classrooms* (Mean: 4.43, *SD* 1.12). The teachers were, however, uncertain about *integrated education being a desirable practice* (Mean: 3.28, *SD* 1.08). They were somewhat negative about the suggestion that *integrated education will prove to be successful in practice*; and they were very negative about *the feasibility of teaching the full range of ability and disability in the same classroom* (Mean: 2.41 *SD* 1.12). It may be concluded that these secondary teachers, as a group, were more negative than positive about the general principles of integration. While they believed it was every child's right to be educated in a regular classroom, they seemed to doubt that such a system was actually feasible in practice. Differences between teachers with guidance training and those without guidance training are discussed later in answer to Question 3.

Research Question 2: *Do secondary school teachers' attitudes and beliefs about integration vary according to the type and severity of disability or difficulty the student has?*

The results summarised in Table 2 show that teachers had the most positive attitudes towards the integration of students with diabetes, mild speech disorders (e.g. stuttering), epilepsy, physical disabilities, and those with minor impairment of vision. The teachers were less certain about the integration of students with more severe speech problems, hearing impairment, cerebral palsy, or autistic features. Teachers exhibited definitely negative attitudes towards integrating students with behavioural problems, those with mild mental handicap, or students with severe vision or hearing problems. In addition, the teachers held a very negative attitude towards the notion of teaching mentally handicapped, gifted and *normal* children in the same classroom.

Research Question 3: *Is there a difference in attitude towards integration between teachers with guidance training and teachers without such training?*

To examine effects of guidance training on teachers' attitudes towards integration, a series of *t*-tests were performed. The level of significance was set at $p<.01$. As shown in Table 3, the results indicated there was a significant difference in the total C-ATMS scores between teachers with guidance training and those without guidance training ($t = 3.32$, $p<.001$). Those with guidance training displayed somewhat more positive attitudes. There were also small but significant differences between teachers with guidance training and those without guidance training in the responses to two individual items, namely integrating students with hearing problems ($t = 2.70$, $p<.01$), and integrated education as a desirable practice ($t = 3.19$, $p<.01$). Again teachers with guidance training displayed more positive attitudes. The results from this study suggest that the absence or presence of guidance training may make a difference in attitude formation towards the practices of integration.

Table 3

Attitudes towards Integration: Comparing Teachers with Guidance Training and Teachers without

Item nos. & topics	Teachers with Guidance Training (n=66 , 19.13 %) Mean	SD	Teachers without Guidance Training (n=279, 80.87%) Mean	SD	t-value
15. Integrate students with diabetes	4.95	.67	4.80	.86	1.62
10. Integrate physically handicapped (not confined to wheelchairs)	4.85	.85	4.70	.98	1.12
12. Integrate students who stutter	4.70	.99	4.69	.92	.06
2. Every student's right in regular classroom	4.64	.95	4.39	1.18	1.78
14. Integrate students with epilepsy	4.50	1.08	4.31	1.12	1.26
9. Integrate physically handicapped students (confined to wheelchair)	4.51	1.15	4.29	1.18	1.37
5. Integrate students with visual impairment (can read standard printed materials)	4.31	.98	4.06	1.02	1.79
13. Integrate students with speech difficulties	3.46	1.25	3.61	1.29	-.84
7. Integrate students with hearing problems(not deaf)	3.91	1.30	3.45	1.23	2.70*
11 Integrate students with cerebral Palsy (can control limbs)	3.62	1.25	3.35	1.18	1.67
19. Integrate students with autistic features	3.55	1.11	3.32	1.37	1.39
1. Integrated education is a desirable education practice	3.70	1.13	3.22	1.07	3.19*
18. Integrated education will prove to be successful in practice	3.43	1.19	3.05	1.11	2.38
17. Integrate students with persistent discipline problems	3.38	1.21	3.03	1.21	2.15
4. Integrate students with mild mental handicap	3.39	1.20	3.01	1.07	2.36
16. Integrate students with significant behaviour problems	3.09	1.13	2.72	1.16	2.36
6. Integrate students with visual impairment(can't read regular standard printed materials)	2.76	1.16	2.45	.94	2.27
8. Integrate students with deafness	2.74	1.24	2.44	1.09	1.96
3. It is feasible to teach the gifted, normal,and mentally retarded in the same classroom	2.68	1.05	2.36	1.13	2.04
Total score of C-ATMS	53.08	8.53	49.24	8.01	3.32**

*p<0.01, **p<0.001Note. Rating on 6- point Likert scale, 1=Strongly Disagree, 2=Disagee, 3=Slightly Disagree, 4=Slightly Agree, 5=Agree, 6=Strongly Agree; Items, except 19, were adapted and translated from the *Attitude Towards Mainstreaming Scale*(ATMS) devised by Berryman & Neal (1980). Alpha value of the total scale of C-ATMS=.82.

Discussion

The results of this study suggest that teachers in Hong Kong's secondary schools do not hold particularly favourable or supportive attitudes towards the practicability of integration. While the majority of these teachers (79.3%) supported the underlying basic principle of integrated education--that it is every child's right to learn in a regular classroom--only 42.4% of the teachers in the present sample considered integration desirable, and even fewer (37.9%) considered that integration would prove to be successful. In the US, Scruggs and Mastropieri (1996) reviewed the literature on teachers' perceptions of integration and inclusion over the period 1958 to 1995. They reported that about 66% of regular classroom teachers expressed favourable attitudes towards the general concept of inclusion, but less than one third of them believed they had sufficient skills, training, resources or time to implement inclusion effectively.

Not unexpectedly, teachers' attitudes varied with the type and severity of the student's disability. This is consistent with findings in other studies in many parts of the world (e.g. Forlin et al., 1996; Horne, 1983; Scruggs & Mastropieri, 1996; Stewart, 1983). If teachers are to become more welcoming to students with moderate disabilities or with emotional and behavioural problems, staff development strategies will need to focus on existing examples of good practice in other countries. The recommendation of the Education Commission (2000) that special schools and their staff should become resources for mainstream schools may also help in this matter. Observation visits, teaching exchanges and workshops shared by mainstream and special school teachers may provide opportunities for mainstream teachers to discover more about the learning potential of students with low incidence handicaps, and to increase their awareness of what may be possible in the regular classroom. In the continuing Pilot Study on Integration, researchers could explore the levels and types of support teachers need for integrating students with more significant disabilities in regular classroom, as has been attempted in other countries (e.g. McKinnon & Gordon, 2000).

The results showed a small, but statistically significant difference in the attitudes of teachers with and without guidance training. It may be, of course, that guidance training itself has not been the primary influence on the attitudes of these teachers. They may, for example, already be more sensitive to and interested in students' special needs, which is the reason they were interested in taking guidance courses in the first place. However, elements of guidance training could indeed contribute to the teachers' professional development. The knowledge of student development, the attitudes of understanding and respecting students as unique individuals, and skills in relationship building and group work are usually cultivated among teachers in guidance training (e.g. Hall, Hall, & Sirin, 1996; Hall et al., 1999; See, Hall, & Hall, 1998). These might make a difference in teachers' attitudes towards integrating students with special needs.

The possible effect of guidance training on attitudes suggests that guidance training might be a beneficial preparation for all teachers, and in particular resource teachers and guidance

teachers. The more favourable attitudes of teachers with guidance training also suggest that school based training workshops in guidance could be organized as part of the staff development programme for all teachers of the schools involved in integration of students with special needs (Berry, 1987; Garvar-Pinhas & Schmelkin, 1989).

The present investigation was limited to the assessment of teachers' attitudes towards placement of students with special needs in regular classrooms. Teachers' concerns, teaching strategies, and needs for support are also important variables that deserve further research. In relation to teachers' needs and practices in integrating students with different special needs, in-depth case studies would provide valuable understanding in the classroom, school and cultural contexts. With regard to the possible guidance training effects on teachers' attitudes towards integration, an interesting direction for further research would be to follow up on the long term effects of a guidance training programme.

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CHILDHOOD AND ADOLESCENT DEPRESSION: A REVIEW WITH SUGGESTIONS FOR SPECIAL EDUCATORS

Katie Rice
and
T. F. McLaughlin
Gonzaga University

Depression can be defined as a syndrome of abnormally dejected mood, persistent over time that interferes with daily functioning (Coleman p.116, 1986). The current belief on childhood and adolescent depression is that children exhibit depressive symptoms paralleling those in adults. Teachers of behavior disordered students will undoubtedly encounter depressed students and should be aware that depression may significantly affect the way these students function in their daily activities. This paper defines depression and examines diagnosis, characteristics and symptoms, etiology and development, assessment procedures, and treatment teachers, parents, and clinicians can use when working with depressed children and adolescents.

Research on childhood and adolescent depression has only recently been looked at among individuals of the mental health community. Psychoanalytic views are one of the main reasons for delays in this area of study. The Psychodynamic view is based on the belief that depression as a clinical disorder does not exist in children. According to this theory, depression is a disorder that exists in a well-developed superego in which the real and ideal self are in conflict with one another (Schultz & Schultz, 2000). Because it is believed that the superego does not mature until an individual is well into adolescents, the appearance of full clinical depression in childhood is nonexistent (Witt, Elliott, & Gresham, 1988).

Other theorists hold the view that depression can exist in children, but that its manifestations differ significantly from adult depression. This particular belief is called

masked depression in which depression is manifest in several different ways than that of adults. There is also the belief that depression emerges as a part of normal development. This view states that there are characteristics of depression such as tantrums and fears that are common over the course of childhood (Lapouse, 1966). Finally, some theorists believe childhood and adolescent depression is a syndrome or disorder. This position is adopted in current psychiatric diagnosis and criteria for childhood and adolescent depression and has been applied in the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R).

There has been overwhelming evidence to support that depression exists in both children and adolescents and is a reason why their daily functioning is affected. Some symptoms might include low self-esteem, decreased energy level, as well as lack of interest in school activities and work. It then becomes essential for educators to have an understanding of what these symptoms are and ways to help these particular individuals.

Diagnosis of Depression

There has been several different criteria set up to identify children and adolescents with depression. The Feighner Criteria was established in the early 1970s by researchers at Washington University who published diagnostic criteria for use in adult psychiatric research (Feighner, et al., 1972). This criterion was designed to specify symptoms for diagnosing certain disorders. Later, the Feighner Criteria was expanded into the Research Diagnostic Criteria (RDC), which encompassed a wider range of disorders. The Feighner Criteria, along with the Research Diagnostic Criteria, served as a model in helping to develop the most widely used criteria among researchers and teachers, *Diagnostic and Statistical Manual of Mental Disorders III* and *Diagnostic and Statistical Manual of Mental Disorders IV* (DSM-III-R and DSM-IV) (Witt, et al., 1988).

DSM-III-R provides three primary diagnostic categories of depressive disorders. These three categories include: major depression, dysthymic disorder, and atypical depression. Furthermore, these categories differ in number, duration of the symptoms, and severity with major depression being the most severe and atypical depression being the least severe. Major depression includes prominent and persistent dysphoric mood or loss of interest and pleasure in usual activities (Coleman p.117, 1986). Dysphoric mood includes symptoms of being sad, low and irritable. In addition, individuals must posses four of the following symptoms for at least two weeks: change in appetite or weight, insomnia or too much sleep, psychomotor agitation or retardation, loss of interest or pleasure in usual activities, loss of energy, feelings of worthlessness, inability to concentrate, and recurrent thoughts of death (American Psychiatric Association, 1987).

The Weinberg Criteria have also been used in identifying children and adolescents with depression. These criteria indicate that multiple symptoms can be considered for depression as a disorder. Children who meet the Weinberg Criteria tend to have other

psychiatric diagnosis, which is unlike DSM-III-R and DSM-IV that contains of specific symptom criteria for depression. The Weinberg Criteria, in comparison to DSM-III-R and DSM-IV, is less selective for reaching a depression diagnosis and requires fewer number of symptoms to be counted as signs of depression. Furthermore, the Weinberg Criteria is not exclusive and major depression might be diagnosed in cases where another disorder might be present (Witt et al., 1988).

The most recent criteria that has been established is the *Diagnostic and Statistical Manual of Mental Disorders* in 1994 (DSM-IV). According to DSM-IV, five out of nine depressive symptoms must be present, one of which must be depressed mood or loss of interest or pleasure, for at least two weeks in order to receive a diagnosis of Major Depressive Disorder (American Psychiatric Association, 1994). Similar symptoms are included in both the Weinberg Criteria and Research Diagnostic Criteria (Watson & Robinson, 1998).

Educators face a major task of distinguishing whether a child's characteristics fulfill these criteria and whether the student should be referred for special treatment or if these characteristics are due to some other cause. In order for symptoms to have any significance teachers should make sure that a change in behavior has occurred. Many times children are moody and unexcited about activities. However, this is not the only criterion for referring children for special help. Secondly, teachers should look for consistency in this behavior. In order for depression to be considered, teachers must acknowledge the length of time these symptoms occur. If the symptoms are periodic and short-lived, then depression should not be considered as a factor. It is also important that teachers are aware of whether a student can identify specific events that account for his or her change in mood. Finally, teachers and educators should focus on the affect this behavior has on daily functioning (Witt, et al., 1988). It is important to look for signs of changes in school performance, attendance, and participation in school activities in order for referral to special services to be warranted.

Characteristics and Symptoms

Depressive symptoms fall under four major categories: emotional and affective symptoms, cognitive symptoms, motivational symptoms, and physical symptoms. Emotional and affective symptoms include dysphoric mood and inability to experience enjoyment in previously pleasing activities (Coleman, 1986). For example, a child would have emotional or affective symptoms if he or she experienced excessive crying or was unable to respond to humor.

Children and adolescents that are identified as having cognitive symptoms are those individuals that negatively evaluate themselves or have feelings of guilt and hopelessness. Negative self-evaluation includes those students who do not like

themselves or often blame themselves for things. Guilt can also be linked to one's self-evaluation because depressed children often blame themselves for things they do not do right (Coleman, 1986). Hopelessness characterizes those individuals that see no hope in their future and that things will not look better for them.

Motivational and Physical symptoms are two other categories to describe depressed individuals. Motivational symptoms range from social withdrawal to feelings of suicide. Children who are depressed tend to avoid social interactions and often face feelings of worthlessness. Physical symptoms include chronic fatigue, low energy levels, sleep disorders, changes in appetite, and psychomotor agitation or retardation (Coleman, 1986).

Etiology of Child and Adolescent Depression

Identification of the causes of depression are not yet established. However, there are a number of models and theories to how depression is developed. These theories are derived from preexisting adult models and include both psychosocial and biological views on depression. The psychosocial models include psychoanalytic, behavioral, cognitive, and socio-environmental views. On the other hand, the biological models include biochemical and genetic views.

The psychoanalytic view is based on Freud's beliefs, which emphasized the unsatisfied libidinal strivings. For example, if a child desired a particular object, but is unable to obtain it, the child will then experience feelings of depression (Schultz & Schultz, 2000). The child's identification with the parent as well as self-criticism and rejection are also an essential part of this particular theory. Furthermore, this view attributes depression to experiences in childhood. Unfortunately, these views are primarily theoretical and lack a great deal of research (Coleman, 1986).

The behavioral view states that symptoms of depression are considered to result from problems in interacting with the environment. Lewisohn (1974) offered a model of depression in which depression develops when individuals fail to receive positive reinforcement from social interactions with others (Watson & Robinson, 1998). Furthermore, Lewisohn states that the amount of positive reinforcement received by an individual is based not only on the amount of reinforcement that is available, but the individual's skill at eliciting it. This model also expresses that individuals that receive a low rate of positive reinforcement for their social behaviors, will become increasingly more passive and non responsive. This lack of positive reinforcement will ultimately lead to dysphoric mood (Coleman, 1986).

Rehm (1977) also proposed a behavioral model for self-control of depression which focuses on the individual's maladaptive self-regulatory processes in coping with stress. Rehm felt that depressed individuals had deficits in self-regulating monitoring,

evaluating, and reinforcing behaviors. Furthermore, these individuals tended to focus on negative events, set overly stringent criteria for evaluating their performance, and administered little reinforcement to themselves. This particular model reflects some of Lewisnsohn's beliefs as it focuses on the idea that reduced activity and lack of reinforcement are correlated to helplessness and depression (Rehm, 1977).

The next psychosocial model is the cognitive view. The cognitive and behavioral views are often hard to distinguish because they rely on similar constructs and treatment procedures that often overlap (Witt, et al., 1988). The two major theorists that contribute to the cognitive view are Seligman and Beck. Seligman's original model discusses how people displaying depressive symptoms attribute negative events to internal, stable, and global factors, whereas positive factors are attributed to external and specific factors (Watson & Robinson, 1998). There are also three factors that contribute to this helplessness model: i1. Did the individuals behavior result in an outcome, 2. Will the cause of the outcome always exists, and 3. Did the cause affect all areas of specific outcome (Watson & Robinson p.398, 1998).

On the other hand, Beck's cognitive model of depression is based upon three related concepts: the negative cognitive triad, negative schemata, and cognitive distortions. The negative cognitive triad refers to the depressed persons perception of the self, world, and future. On the other hand, a negative schema refers to an individual's stable thought patterns of these same three elements. Furthermore, the cognitive distortion is based upon the idea that depressed individuals fail to process information that is incongruent with their negative self-schemata (Beck, 1976). In summary, Beck's model states that depression develops as the individual moves from realistic self-appraisal to self-devaluing, to a positive appraisal of the environment to a negative one, and from hopeful appraisal of the future to feelings of hopelessness.

The final view of the psychosocial model is the socio-environmental view. This view focuses on the life events that may influence the emergence of symptoms of depression. Research supports the idea that many individuals expressing depressive symptoms often report that stressful life experiences have lead to these symptoms. For example, many individuals often face feelings of hopelessness and risk suicide after a stressful life event. Research has also been done to show that stressful events appear to precede the onset of depressive symptoms (Brown, Harris, & Peto, 1973).

The two biological views on depression are the biochemical view and the genetic view. In the biochemical view theorists focus mostly on chemicals in the brain (neurotransmitters) that facilitate transmission of neural impulses. The two most frequently targeted neurotransmitters are nonrepinephrine and serotonin (Coleman, 1986). Many researchers feel these two chemicals affect depressive symptoms in individuals. Believers of this view also feel that affective disorders such as depression

are characterized by a deficit due to excess neurotransmitters or an imbalance of neurotransmitters. Furthermore, neurotransmitters such as noradrenaline, serotonin, acetylcholine, which have been implicated in depressive disorders, regulate the sorts of neuroendocrine agents that control pituitary control (Witt, et al., 1988). Deficiencies in these neurotransmitters would be reflected in deficiencies in hormonal responses. This implies that individuals experiencing these deficiencies might show a change in behavior such as disturbances in mood, sleep, mood, and activity.

The genetic view is also an important view because it states that close relatives of persons with major depression are more likely to have the depressive disorder than are unrelated persons (Watson & Robinson, 1998). Research has shown that parents who are depressed are more likely than non depressed parents to have children with depressed symptoms (Brody & Forehand, 1986). Furthermore, researchers Weissman, Fendrich, Warner, and Wickramaratne (1992) found that more than 50% of children of depressed parents were diagnosed with depression before the age of twenty. Studies have also shown that depressed children also regard their families as being more negative and spend less time doing recreational activities when compared with normal individuals their age.

The psychosocial and biological model are only two of the many models that have been developed regarding depression in children and adolescents. There have been many theories that hold very different views than these two models, while other theorist present a more specific view within these particular models. Studies on the characteristics of children and possible etiological models that these characteristics support have only begun to be looked at in the past few decades and still need extensive research before any one model can be accepted.

Assessment

There are a number of assessment tools available to assist in both diagnosing and estimating the severity and duration of different symptoms. The three primary measures are interviews, rating scales, and behavioral observations. However, there are several alternative methods such as Rorschach Test, Thematic Apperception Test, and Draw-Person Test that have also been used to assess childhood and adolescent depression.

The parent interviews are extremely important because parents can provide crucial information in identifying depressive symptoms in children. Parents are also a good source of information because they can usually describe the child's behavior across a variety of settings and situations. Parent interviews begin by gathering general information regarding social, medical, and academic history (Watson & Robinson, 1998). Questions are then asked about when the depressive behavior was first noticed and in what situation the behavior occurs. The interview will also consist of a set of questions about the child's activity level, appetite, and sleep patterns.

It is also very important to use self-report methods because many times depressive symptoms are not easily observed. However, one should take caution when using these measures because there are major concerns about a child's willingness and capability to report his or her depressive symptoms. One of the most effective self-report methods is the Schedule for Affective Disorders and Schizophrenia (Chambers et al., 1985). In this particular assessment measure the child is involved in an unstructured interview followed by a structured portions where the child is asked about the duration and severity of the behavior (Witt, et al., 1988). This measurement is given separately to the parent and then the child. The discrepancies are then resolved to reach a consensus on the specific symptoms the subject might have according to the Diagnostic and Statistical Manual of Mental Disorders.

The most widely used self-report measure is the Children's Depression Inventory (Kovacs & Beck, 1977), which consists of items addressing cognitive, affective, and behavioral signs of depression. In this interview the child is asked to select one of the three alternatives for each items that applies to them in the last two weeks. For example, a child may be asked to select from the following alternatives: I feel like crying everyday, I feel like crying once and awhile, I feel like crying many days (Witt, et al., 1988). At the end of the assessment procedure one should be able to identify the severity of the depressive symptoms. This is an especially effective procedure to use because it provides a high internal consistency and moderate to high test-retest reliability.

The Self-Rating Scale (Birleson, 1981), Modified Zung (Lefkowitz & Tesiny, 1980), and the Face Valid Depression Scale for Adolescents (Mezzich & Mezzich, 1979) have also been used as self-report measures to determine the severity of a child's depressive disorders. The Self-Rating Scale consists of 18 items that is scored on a three-point scale. The Modified Zung measurement is structured in a yes/no format to identify the presence or absence of depressive symptoms. This particular measurement was revised from an adult scale in which the number of items were reduced and reworded. The Face Valid Depression Scale for Adolescents contains 35 items and is scored on a 0 to 1 scale of true/false questions that characterize the respondent. Other self-report measures that have been used, but lack a great deal of research are The Interview Schedule for Children, The Child Assessment Schedule, and The Diagnostic Interview for Children.

Rating scales can also be used as an assessment tool to gain information about the severity and duration of a child or adolescent's depressive symptoms. These assessment procedures can be used by both adults and peers in helping to identify a child's depressive symptoms. Rating scales by adults refers primarily to parents and teachers who are asked to evaluate the child's depression. Some of the measures included in the rating scales for adults are the Personality Inventory for Children, Children's Depression Inventory, and the Children's Depression Rating Scale.

The Personality Inventory for Children is a parent-rated scale that includes multiple areas of child dysfunction (Wirt, Lachar, Klinedinst, & Seat, 1977). The second type of measure is the Children's Depression Inventory (Kovacs & Beck, 1977), which are altered for the parent or adult to make sure the child's depression is properly evaluated. For example, many times parents or teachers are asked to complete the Children's Depression Inventory for the child. However, probably the most effective procedure is to use both the parent and child's responses as direct comparisons and then evaluate the correspondence of responses. The third type of measure is the Children's Depression Rating Scale (Poznanski, Cook, & Carroll, 1979), which consists of 17 items concerning depression, each of which is rated on a scale for severity of dysfunction.

Peer rating scales are also used as an effective measuring tool because peers are able to observe one another across a wide range of settings and for a long period of time. The primary peer-based measurement is the Peer Nomination Inventory for Depression (Lefkowitz & Tesiny, 1980). This measurement is concerned with context of the group evaluation (e.g. friend group or class group) and the different characteristic of the child. The Peer Nomination Inventory for Depression consists of 20 items in which children are asked several different questions such as Who plays alone. Each child nominates other children for each question and then the child's own score refers to the total sum of nominations he or she received from other peers.

Many symptoms of depression refer to observable behavior such as diminished motor activity, slowed speech, and sad facial expressions. For this reason it is important to conduct direct observation measurement to assess the severity of depressive symptoms. Direct observation allows one to determine whether the parent and child's reports of the problem were accurate. In addition to observations in the natural setting of the subject, clinical observations and parent interaction observation are also used.

There have been several studies that have used this method of direct observation in order to obtain data on depressed children and adolescents. In one study nonverbal behaviors were assessed during an interview session in which eye contact, bodily movement, gestures, and frowning were assessed (Kazdin, Sherick, Esveldt-Dawson, & Rancurello, 1985). Direct observation was also used with inpatient children, ages 8-13 years of age. In this particular study researchers focused on behaviors that occurred during fee-time periods over the course of the week. The behaviors observed were put into three categories: social activity, solitary behavior, affect-related expression (Kazdin, Esveldt-Dawson, Sherick, & Colbus, 1985). Both studies indicated the presence of depressed symptoms in early childhood and in adolescents.

One should also note that there are several concerns with using these different assessment procedures. One major concern is a subjects ability to truly be objective about his or her behavior when participating in a self-report measurement. Another major

issue with assessment measures is that often times reports from parents and teachers do not correlate with the subjects report. It then becomes an issue of whether or not to believe the subject or the parent. Furthermore, it is important to know that many of these procedures still need to undergo extensive amounts of research. Children's Depression Inventory has been frequently evaluated in many contexts (Witt, Elliott, & Gresham, 1988). However, the bulk of the other measurement procedures need to be looked at in further detail.

Treatments

Many therapies have been evaluated for the treatment of depression in adults. Some of these procedures have begun to extend into childhood and adolescents. Psychotherapy, medication, and school-based intervention are the most widely used treatment for children and adolescents today.

Psychotherapy is a technique that is usually used for mildly depressed individuals. Cognitive therapy as well as behaviorally oriented treatment are two of the most effective psychotherapy models. Behaviorally oriented treatment focuses on increasing the pleasant or rewarding activities of depressed persons. This treatment requires patients to monitor their daily activities, to increase activities that are reinforcing, and to decrease activities that are aversive (Witt, Elliott, & Gresham, 1988). It should be noted that psychotherapy is usually used with mild cases of depression while more severe cases use medication to help mediate depressive symptoms (Coleman, 1986).

There have been several research studies that have focused on using the behavioral, cognitive, and cognitive-behavior treatments. One particular study by McLean (1981) used the behavioral technique to alter six skill areas. The specific skills that were altered were verbal communication, behavioral productivity, social interaction, assertive behavior, decision making and problem solving, and self-control. This particular study, along with Calpin's (1978) and Molickís (1982) study, revealed that treatment based on skill development improves depression (Calpin & Cinciripini, 1978; Molick & Pinkston, 1982).

Another study by Reynolds and Coats (1985) compared cognitive-behavioral treatment with relaxation treatment among depressed adolescents. In this study treatment of both techniques were provided in 10-minute session that lasted over a 5-week period. The cognitive-behavioral treatment group received training that focused on cognitive and behavioral models, while the relaxation treatment group received relaxation training and were assigned to practice these techniques for homework. The results indicated that both techniques were successful in the reduction of depression after a 5-week period (Reynolds & Coats, 1985).

Medication therapy is another alternative for children suffering from depression. Many

of the medications that have been used for adults have begun to be applied to children with depression including imipramine, Desipramine, amitriptyline, and many other antidepressants (Witt, et al., 1988). However, antidepressants have been under a great deal of research and have raised concerns about the negative effects of these drugs. Further research needs to be done on the use of different antidepressants in hopes of finding a medication that has few side effects and only requires individuals to take them in small doses.

Many studies have also been conducted concerning the effects of many of these medications. In one study done on imipramine, some individuals were given imipramine to reduce depression, while the control group was given a placebo drug to compare imipramine's effect on depression to that of the placebo drug (Puig-Antich & Weston, 1983). The results of this study indicated that imipramine and the placebo yielded similar effects in the treatment of childhood depression. This same study also looked at the relationship these drugs had to the plasma level of imipramine. Subjects with higher levels of plasma showed 100% response to treatment whereas those with lower levels showed only a 33% response. These results suggested that treatment effects are also dependent on a steady plasma level.

Finally, school-based interventions can be used to treat children and adolescents suffering from depression. For example, Butler (1980) compared social skills combined with problem solving to a cognitive restructuring approach with upper elementary children and discovered that both groups improved on self-report measure of depression as compared to the control group (Butler, Miezits, Friedman, & Cole, 1980). Other studies have been done in comparing a cognitive-behavioral approach to relaxation training in adolescents and found that both groups significantly improved over the control group on self-report measures of depression.

Conclusions

Although there is a lack of extensive research on childhood and adolescent depression, research done on adult depression provides a great starting point to help individuals learn more about this disorder. To date, many studies have shown important consistencies between adults and children cognitive processes, biological characteristics, and other areas of depression. The study on childhood and adolescent depression has revealed many implication such as the clear dysfunction among children that goes beyond the occasional sadness that is present in everyday life. Through this identification of depression in children, it also becomes extremely important to be aware of the different assessment procedures and interventions that can be used.

The research on childhood and adolescent depression also has many implications for teachers. Teachers that are dealing with behavior disordered students will certainly encounter individuals with depressive disorders and should be aware that depression can

be under diagnosed. The possibility that other disorders can exist along with depression makes it even more difficult to accurately diagnosis depressed children and adolescents. Furthermore, even though depressive symptoms may include symptoms that can be easily observed such as agitation or aggression, there are also many internal symptoms that are more difficult for teachers to discover. These particular internal characteristics will most likely be manifested in a student's lack of social interaction and inability to complete schoolwork.

Teachers should also be aware and active in their students treatment procedures. For example, teachers should know the different medications students are taking to reduce their depression and should contact the students physicians regarding possible side-effects. For those students receiving counseling or psychotherapy, the teacher should make it a priority to contact the students therapists or counselors to make sure that he or she is consistent in reinforcing the appropriate behaviors as indicated by these professionals. Furthermore, teachers might want to work together with social workers, psychologists, and counselors in teaching social skills and cognitive techniques to the depressed child or adolescent.

It is also important that parents and teachers pay special attention to the behavior of their children and students. Many times behaviors that are assumed to be related to different mood swings, may actually be related to depressive symptoms. If it is evident that a child is depressed or irritable most of the day, experiences loss of energy, becomes aggressive, or any other symptoms correlated to depression, then it becomes essential that parents and educators take the proper precautions to get the child the best help necessary. Furthermore, it is essential that both the school and home become active in the child's treatment procedures. By working together, it is easier to address the child's needs and to reduce his or her depression. Although there is no cure for depression, with continuous research of assessment measurements and treatment new discoveries will hopefully be made to find ways to alleviate the constant struggles depressed children and adolescents face on a daily basis.

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