A 2:1 Clinical Practicum, Incorporating Reciprocal Peer Coaching, Clinical Reasoning, and Self-and Peer-Evaluation

Un stage 2 pour 1 : allier l'encadrement réciproque des pairs, le raisonnement clinique ainsi que l'auto-évaluation et l'évaluation des pairs

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Abstract

The paper reports on the development and implementation of an innovative approach utilized in a clinical practicum involving speech-language pathology graduate students. A 2:1 student-to-clinical educator ratio supervision model was employed. This means that one clinical educator supervises two students simultaneously. The reciprocal peer coaching approach to peer learning was applied. This clinical practicum model further incorporated principles from research on clinical reasoning. There was also concomitant emphasis on the development of self- and peer-evaluation skills, which the author had already promoted in the clinical education of speech-language pathology students. The paper then goes on to describe how this framework was applied to the clinical practicum that two students undertook jointly in two pediatric settings, with a different clinical educator in each setting. This particular 2:1 student-to-clinical educator ratio supervision model is recommended to clinical educators interested in implementing innovative teaching strategies; they may consequently obtain a higher degree of satisfaction when supervising students. University programs may adopt this model in their in-house clinics or encourage clinical educators external to the program to use it in their settings.

Abrégé

Cet article porte sur l'élaboration et la mise en œuvre d'une démarche novatrice pour les stages en milieu clinique des étudiants diplômés en orthophonie. L'étude qui y est décrite est fondée sur un modèle où deux étudiants sont supervisés simultanément par un formateur clinique. La méthode d'enseignement réciproque par les pairs a été utilisée. Le modèle de stage a également inclus des principes de la recherche sur le raisonnement clinique. Le stage a aussi mis l'accent sur l'acquisition de compétences pour l'auto-évaluation et l'évaluation de ses pairs. L'auteur a déja fait valoir ces compétences pour la formation clinique des étudiants en orthophonie. Cet article commence ainsi par décrire comment ce modèle a été utilisé lors d'un stage conjoint effectué par deux étudiants dans deux milieux pédiatriques différents. Le superviseur de stage était différent dans chacun des deux milieux. Ce modèle de supervision de deux étudiants pour un formateur clinique est recommandé pour les formateurs intéressés à mettre en œuvre des stratégies d'enseignement novatrices. Ils pourraient ainsi obtenir un niveau de satisfaction supérieur dans leurs tâches de supervision. Les programmes universitaires pourraient adopter ce modèle dans leur clinique interne ou encourager les formateurs cliniques externes rattachés à leur programme à utiliser ce modèle.

Key words: speech-language pathology; clinical education; clinical educator; 2:1 supervision model; reciprocal peer coaching; clinical reasoning skills; self-evaluation and peer-evaluation.

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Introduction

A shortage of clinical placements for speech-language pathology graduate students is a widespread problem in many geographical locations in Canada. One of the ways in which the School of Communication Sciences and Disorders (SCSD) at McGill University has attempted to address this issue is through the establishment of clinical models that maximize available human resources.

Satellite clinics have been established by SCSD to meet the need for clinical practica and simultaneously offer speech-language pathology services to under-serviced populations. In these clinics, a clinical educator (CE) typically supervises two students concurrently. This supervision model is commonly referred to as the 2:1 student-to-clinical educator ratio supervision model ("2:1 Supervision Model").

In May 2002, a pilot project was introduced in which two first-year graduate students and two CEs participated. The students spent two days per week in a day care with one CE and two days per week in a pre-kindergarten setting within an inner city school, with the author as the CE. The project lasted five weeks and was the students' first practicum. The goal was to make it a first-rate, high quality learning experience. Therefore, the following innovative aspects of clinical education were incorporated: the 2:1 supervision model, with emphasis on (1) reciprocal peer coaching, (2) clinical reasoning (cf. Ladyshewsky), and (3) self- and peer-evaluation, derived largely from Westberg (e.g., Westberg & Jason, 1991, 2001) and from the author's own experiences with clinical supervision (Claessen, 1997).

In the health care professions, the concepts of reciprocal peer coaching and clinical reasoning have been utilized and reported in clinical education, particularly in physical therapy (Ladyshewsky, 1993, 2000a, 2000b; Ladyshewsky, Baker, & Jones, 2000; Ladyshewsky, Barrie, & Drake, 1998), occupational therapy (Neistadt, 1996), dental education (Kleffner & Dadian, 1997), and nursing (Goldenberg & Iwasiw, 1992). The pilot project reported on here involved the adaptation of these approaches to clinical education in speech-language pathology. The primary objective of the project was to create opportunities for optimal collaboration between students in a 2:1 model (reciprocal peer coaching) as a means of enhancing their thinking and problem-solving (clinical reasoning) skills. The project also involved the incorporation of feedback techniques documented in the research literature on supervision, and others that have been utilized by the author in her own previous experiences as a CE. These techniques allow students to measure their own, each other's, and client progress over time.

The current framework, as will be seen, can add an additional dimension to the clinical education process by bringing about greater clinical competencies in students, and concomitant greater satisfaction levels for both the students and CE involved. Moreover, this model with the addition of self- and peer-feedback can easily be incorporated into the clinical education of students from other health care professions, where reciprocal peer coaching and clinical reasoning approaches have already been implemented in 2:1 models.

The first part of this paper describes the three components with reference to the literature. The second part addresses the structure and content of the practicum, and then reports how the components were combined and applied to the practicum. The paper concludes with an evaluation of the project and recommendations for implementations of the model.

The Three Practicum Components

1. The 2:1 Supervision Model and Reciprocal Peer Coaching

A 2:1 supervision model exists along a continuum. This ranges from an "Individualistic Learning" (IL) model, where two students may work under one CE, but totally independently, each carrying their own caseload, to a "Peer Assisted Learning" (PAL) model, where collaboration of varying degrees occurs between two students (see Ladyshewsky, 2000a). A PAL model allows students to become more actively engaged in the learning experience (Callan, O'Neill & McAllister, 1993; Ladyshewsky, 1993; Ladyshewsky & Healey, 1992; McFarlane & Hagler, 1993). It is a known fact (e.g., Johnson & Johnson, 1987, 1978) that learning accelerates at a faster rate and is of higher quality when students work in groups. For example, in the author's experience, assessment reports written by students in a PAL model demonstrate consistently higher-quality analysis and synthesis skills than in an IL model. A 2:1 supervision model, incorporating PAL principles, gives students the opportunity to engage in self-directed learning, to problem-solve together, and to work as a team (Lincoln & McAllister, 1993). Further, in such a peer learning model students have the opportunity and may be more inclined to approach each other for the kind of advice their CE (at least in their eyes) might perceive as trivial. For example, when analyzing a language sample together, a student is more likely to approach a peer with the question, "How many morphemes are there in 'I'm gonna …?'," or, when in doubt while analyzing a fluency sample, a student may feel comfortable asking a peer, "Was that a repetition or a prolongation?"

Lincoln and McAllister (1993) refer to peer learning (which includes PAL) as a "*process*"[italics added], while peer tutoring, peer teaching, peer review and peer evaluation refer to *procedures* [italics added] designed to facilitate the process of peer learning" (p. 18). In a PAL model, collaboration may consist of students observing each other and providing each other consultative assistance. They may also together carry out assessment (e.g., one student administering a test, the other student scoring), analyze data, prepare and carry out therapy sessions, and write reports. This collaboration may pertain to individual cases or (partly) shared cases. Some of the many advantages of a PAL model include (Ladyshewsky, 2002):

- encouragement of student responsibility for learning,
- helping students to wean themselves from considering CEs as the sole source of knowledge and understanding,
- opportunity for students to explore alternative problem solutions in a safe environment,
- development of social interaction and communication skills,
- enhancement of student satisfaction with the learning experience, and
- enhancement of self-esteem.

Ladyshewsky (2000b) has described a recently elaborated element of the PAL model as a learning experience where peers coach one another during clinical activities under the supervision of a CE. This newer element is referred to as Reciprocal Peer Coaching (RPC). Consistent with PAL, RPC is high on equality and mutuality between students (Damon & Phelps, 1989). Ladyshewsky (2000b) explains, "*Equality* describes the extent to which learners take direction from one another. *Mutuality* describes the extent to which the learners' discourse is extensive, intimate and connected" (p. 15). According to Ladyshewsky (2002) and Ladyshewsky et al. (2000), RPC affords students the opportunity to engage together in a range of activities, which may take place with either individual or shared caseloads. These activities include:

- learning through demonstration (to and from each other, and from the CE),
- observing one another (and/or their CE),
- performing clinical activities together (e.g., testing, therapy, analyzing results, preparing materials, etc.),
- providing each other with consultative assistance,
- discussing and problem-solving together, and
- providing each other, in some practica, with non-evaluative feedback (peer-evaluation or peer-critiquing).

In a RPC model, a peer-critiquing dimension may or may not be built in. The decision to incorporate this will be guided by factors such as student and CE comfort levels, students being of similar strength, etc. (see "Peer-critiquing," below).

Discussion, joint problem-solving, and reciprocal coaching help students develop *Clinical Reasoning* skills, which bring about greater levels of competency (Boud, 1988).

2. Clinical Reasoning

Jones and Butler (1991) define clinical reasoning as "the application of relevant knowledge … and clinical skills to the evaluation, diagnosis and management of a patient problem" (p. 92). Higgs and Jones (2000) state that in clinical practice these "thinking and decision-making processes … [are] central to the practice of professional autonomy" (p. 3) and amount to using the best judgment in particular clinical situations.

Clinical reasoning consists of three interactive components (Higgs, 1992; Higgs & Jones, 1995):

1. theoretical knowledge,
2. cognition, i.e., thinking skills of analysis, synthesis and evaluation of data, and
3. meta-cognition: awareness of one's own thinking and ability to assess one's own knowledge.

McAllister and Rose (2000) report that in the speech-language pathology literature the term clinical reasoning rarely occurs. It is encountered much more frequently in the literature of other health care professions, such as medicine, occupational therapy, physical therapy, and nursing. Yet, speech-language pathologists (SLPs) know only too well that every facet of clinical management in their profession involves clinical reasoning. McAllister and Rose state that SLPs are very familiar with clinical problem-solving and decision-making. However, these activities constitute only two elements of clinical reasoning, when, in fact, SLPs engage in all aspects of clinical reasoning:

- clinical decision-making,
- clinical problem-solving,
- diagnostic reasoning,
- clinical judgment, and
- inductive and deductive reasoning (Ladyshewsky, 2000a, 2002).

Perhaps the notion of clinical reasoning is taken for granted because it is the core of what SLPs do. As is the case for so many activities that have become automatic (e.g., cooking, driving a car), we do not break them down into their individual components, and we have learned to take short cuts. In speech-language pathology, experienced clinicians usually do not need to conduct a full phonological analysis to establish therapy goals for a child with a straightforward phonological disorder, whereas student clinicians do. Elstein and Schwartz (2000) refer to this aspect of clinical reasoning as "backward" or "deductive" reasoning, which is a more advanced type of reasoning than "forward" or "inductive" reasoning that is used by novice practitioners who need to test out each hypothesis. If clinical reasoning has indeed become automatic or second nature in experienced practitioners, then it is crucial that clinical reasoning be made explicit during the clinical education of students. CEs need to point out how the components of clinical reasoning (theoretical knowledge, cognition and meta-cognition) are reflected in problem-solving, diagnosis, decision-making, and clinical judgment making. It needs to be conveyed to students that clinical reasoning skills are essential to help them develop into first-class clinicians and consultants, and that these skills need to be maintained during their professional careers.

RPC and clinical reasoning form a good match to effect greater levels of competency in students (Higgs & Jones, 1995). Ladyshewsky (2000a) states, "The discussion that emanates from these [peer coaching] experiences should enable students to create stronger relational structures and pattern recognition frameworks in their knowledge base, leading to better encapsulation of their knowledge and enhanced reasoning potential" (p. 4). According to Ladyshewsky (2002), the combination of RPC and clinical reasoning

- stimulates critical thinking,
- develops higher level thinking skills,
- encourages student responsibility for learning,
- creates an environment of active, involved exploratory learning,
- helps students clarify ideas through discussion and debate, and
- uses a team approach to problem-solving while maintaining individual accountability.

Clinical reasoning in a RPC practicum may be realized by encouraging students, in an atmosphere of exploratory learning, to engage in the following clinical activities:

- sharing and discussing cases,
- observing each other,
- evaluating clients together and engaging in decision-making following analysis of the evaluation results,
- planning therapy goals, and
- carrying out therapy sessions together.

In a RPC framework of clinical learning with emphasis on developing clinical reasoning skills, student ability to *self-evaluate* and *peer-evaluate* becomes an indispensable skill.

3. Feedback and Evaluation

The terms "Feedback" and "Evaluation" are usually considered different activities in the clinical education process. In this paper, the terms "Feedback," "Self-critiquing" and "Peer-critiquing" are used to refer to the process that is often termed "Formative Evaluation" and the term "Evaluation" will refer to what is commonly known as "Summative Evaluation." This section describes the roles of self- and peer-critiquing and self- and peer-evaluation with reference to the literature and the author's own practice as a CE.

Westberg (2001) defines "*Feedback*" as "information that students are given about their performance with the intention of guiding them in acquiring desired attitudes and skills. Feedback can be simply descriptive or it can include some assessment, even some judgement" (p. 13). Feedback can also be considered an ongoing *process* of a CE providing a student with *specific* comments (positive and constructive rather than negative, and specific rather than general) on their performance with the client, following observation by the CE (Westberg, 2001). Feedback is given because

- it is an essential element of the learning process,
- it helps to improve clinical performance,
- it decreases learner anxiety about performance, and
- feedback is valued by students (Westberg & Jason, 1991).

Feedback can be provided by all parties involved: the CE, the student (self-critiquing), the peer (peer-critiquing), and sometimes even the client/patient (Westberg, 2001; Westberg & Jason, 1991). The reflection inherent in self-critiques enables learners to

- identify and build on their existing knowledge,
- identify deficits in their knowledge and errors in their thinking, and
- generalize from particular experiences and apply this new knowledge in later situations (Westberg, 2001).

Feedback may be provided orally during sessions, spontaneous interaction or a scheduled feedback conference, and in writing (McCrea & Brasseur, 2003). To avoid misunderstandings between CE and students later on, it is important to make explicit the feedback process (e.g., how and when feedback will take place, type of feedback). This information can be included in a supervision contract.

Evaluation usually occurs at fixed times during a practicum and tends to be pre-set (e.g., the mid-term and final evaluations). It is more formal in nature and usually a grade or mark is attached to it. The goal of the evaluation is to determine whether the student has met a set of predetermined learning objectives. At McGill University these objectives are set down by the CE and student at the beginning of the practicum in the McGill Supervision Contract.[1] The learning objectives pertain to the student's development in the following domains: clinical (e.g., assessment administration, goal setting, carrying out intervention), professional (e.g., dealing with compliance issues), and personal domains (e.g., becoming more comfortable collaborating with other professionals). These objectives also form the basis for ongoing feedback. If feedback is linked to the learning objectives and has formed a regular part of the clinical education process, there should be no surprises at the time of the evaluation (Westberg & Jason, 1991).

Self-critiquing

Feedback from the CE is always indispensable, but it does not need to be the sole focus. Inviting students to give feedback on their own performance through self-critiquing should also form part of the feedback process. When students develop good insight into their clinical skills by practising self-critiquing, their growth as competent clinicians is enhanced (Westberg, 2001). Ability to self-critique remains important as students enter the profession and encounter potentially lower levels of supervision and guidance. For these reasons, self-critiquing forms the main focus in clinical practica supervised by the author, as, for example, during the practicum in which students provided supervised speech and language services to children in several day cares (Claessen, 1997).

Specific feedback.

Whether it is the CE or the student who gives feedback, both should be aware that feedback needs to be descriptive and *specific*, not general (Anderson, 1988; Kurpius & Christie, 1978; Westberg, 2001; Westberg & Jason, 1991). According to these authors, all too often CE feedback is of a general nature, possibly even more so when a student is performing as expected. Students generally do not find this as useful. Comments such as "Keep up the good work." or "Well done!" help the student to feel good for the moment, but it does not give them any concrete information on how to further enhance their clinical skills (Westberg & Jason, 1991). Thus, when students are asked to self-critique they also have to be specific.

The process of self-critiquing.

At the beginning of a practicum with an emphasis on self-critiquing, the CE may have more of a leading role.

[1] The McGill Supervision Contract is available from the author upon request.

Through modelling she/he may teach giving descriptive and specific feedback about the student's performance. As a next step, the student may be invited to share how she/he thought the client performed and comment on her/his own performance. Then, increasingly the student will be allowed, or even expected, to take the initiative with self-critiquing, and should have the freedom to bring up or to prioritize what she/he sees as important. This allows the CE to understand what the student is learning while gaining an insight into the student's perceptions and clinical reasoning skills. To avoid vague or non-specific students' answers for areas under discussion, the CE may guide the student by asking more specific questions. When students start to get a better sense of *what* it is they are supposed to discuss or to give feedback on, they are likely to become increasingly capable of, and comfortable with, initiating and being specific with their own feedback. Thus, as the practicum proceeds, the self-critiquing process is likely to shift with the roles between CE and student gradually being reversed, from the supervisor initially asking more specific questions to the student increasingly initiating and discussing specific items. During this process, the CE's role will become facilitative rather than leading. This process will allow the CE and the student to gain insight into the student's ability to self-critique, and to analyze both the client's and her/his own progress over time. Additional feedback strategies are outlined in the section on peer-critiquing, below.

Difficulty with self-critiquing.

During self-critiquing, students may become adept at evaluating the client's performance, but have difficulty critiquing their own performance. This may become apparent when, even after the concept of self-critiquing has been explained, the student continues to focus on the client instead of commenting on her or his own performance, or gives vague or non-specific feedback on her or his own performance. In those cases it is important that the CE finds out what lies at the root of this incongruence. The student may be uncomfortable with self-critiquing for a variety of reasons, including:

- poor self-awareness resulting in either an inflated or deflated self-perception of skills,
- a prior bad experience involving a great deal of negative feedback from a CE,
- poor self-esteem, or
- cultural differences (Westberg & Jason, 1991).

The first step may be for the student and CE to identify what is at the root of the student's difficulty with self-critiquing. For example, if the student displays poor self-awareness, the CE may have to explain more specifically what self-critiquing is, its rationale, and benefits. In cases involving a prior bad experience with supervision, personality, or cultural factors, the CE may first seek to gain the student's trust by giving the student ample positive feedback and helping the student to gradually identify areas of strength. In all of these cases, revisiting the student objectives outlined in the supervision contract may help the student refocus on her or his own performance.

Negative self-critiquing.

During self-critiquing of their performance, sometimes students have a tendency to focus on primarily negative aspects. Westberg and Jason (1991) suggest that this tendency may be due to the following factors:

- students may have received negative feedback in the past,
- they may be self-conscious, or
- students from certain cultures, due to societal norms, sometimes have difficulty receiving or giving praise, and even more so, with the idea of 'praising' themselves.

Further, in the author's experience, sometimes students (and CEs!) take positive points for granted or overlook them, because the negative points are more obvious; therefore the focus is shifted to weaker areas. This may be related to the fact that novice clinicians may intuitively do the right thing, but without actual awareness. It may not be until this particular strength is brought to their attention that they recognize it. Nevertheless, there are important benefits related to self-critiques of negative aspects (Westberg, 2001): (a) Students may be empowered when they can acknowledge their own difficulties, (b) it gives the CE insight in the student's level of self-awareness, and (c) it may decrease the need for the CE to convey negative feedback.

Peer-critiquing

Receiving feedback or being (formally) evaluated by a CE can be intimidating for a student. Students may be even more intimidated by the prospect of critiquing each other in front of the CE. CEs may also be uncomfortable with this approach. To lessen this "threat," Ladyshewsky (2002) recommends that feedback between two peers (and CE) be "non-evaluative." In non-evaluative feedback the student is typically not judged, and feedback tends to be descriptive. Further, by presenting a subjective viewpoint it is implied that the students may disagree. Hence, sentences are used containing words, such as: "It appears to me that …," "From my perspective, …" and so forth (Westberg, 2001; Westberg & Jason, 1991).

Three approaches that incorporate and promote non-evaluative feedback in a 1:1 supervision situation have been found to be particularly useful by the author when applied to a 2:1 RCP supervision model:

1. The CE instructs students (or even makes it a rule) that negative feedback can only be given following identification of the positive points, and that the number of positive points needs to outweigh the negative ones.
2. The CE guides the students in turning negative feedback into constructive feedback. For example, if a student has difficulty with superstepping, instead of saying: "You failed to superstep," the CE may say to the student, "Your strategy of modelling the targeted morpheme worked well, as it enabled Kevin to use the progressive tense 'is'. Now let's consider your next step to elicit the same morpheme without modeling."
3. The CE redirects the focus from the student to what she/he did to effect a desired response in the client.

For example, "I noticed that after the patient was given a chance to talk about what was bothering him, he was able to focus better on the therapy task."

These forms of non-evaluative feedback afford students a safer format to critique each other's clinical skills. Moreover, because client performance (progress or lack thereof) forms part of the discussion, clinical reasoning is being integrated in the self- and peer-critiquing process. Peer-critiquing may also take place between the students, in the absence of the CE, and is to be encouraged, especially as students become more independent.

As this model becomes entrenched, and non-evaluative feedback is incorporated into the feedback session in a consistent, natural, and informal fashion, it becomes an integral part of the learning experience. Moreover, the feedback conference will not need to be the potentially anxiety-provoking moment students sometimes fear it to be.

Formal Evaluation

When it comes to the formal evaluation, students may be asked if they are comfortable that this take place in the presence of the other student. Westberg (2001) advises that if the students trust each other, it is possible to give sensitive individual feedback with the other student present, particularly if the CE is offering constructive advice and if the other student can learn from the exchange. For the formal evaluation, the basis could again be self-evaluation, and even peer-evaluation. Successful ongoing self- and peer-critiquing during the practicum should result in the formal evaluation not presenting any surprises. It will be conducted in the same discussion format as the ongoing feedback conferences and feedback sessions, based on equality and mutuality. Nevertheless, in certain cases, one-on-one evaluation or a combination of one-on-one and self- and/or peer-evaluation may be desired. This may apply to situations where more sensitive issues need to be addressed, for example, issues relating to basic capabilities, (inter)personal skills, or discrepancies in students' skill levels. Further, the personal preferences of CE and students need to be taken into account.

The Practicum

Organization

Supervision Structure

This was the first hands-on practicum for two first-year students. They did their placement together in two settings: a day care (D/C) and a pre-kindergarten class (P/K), with a different CE in each.

Service Delivery Structure

The practicum was 20 days in length and took place four days per week over a period of five weeks. The students spent two days per week at the D/C and two days in P/K for a total of 10 days in each setting (20 days total). At the D/C the service was provided by the SLP who had already provided SLP services with students during two previous clinical practica. In P/K the author was the supervising SLP.

Caseload

At the D/C the total caseload included 19 children. The CE and the students provided speech-language therapy to nine children who had already received assessment and therapy services during the preceding fall and winter term. Another 10 children were either monitored or received periodic therapy. Services also included consultations with parents and staff regarding the programming provided.

In P/K the main services offered were screenings, with some formal assessment. The students screened a total of 28 children. They also carried out formal assessments on two children who failed the screening and provided some speech-language intervention to them. In addition, students had the opportunity to participate with their CE in consultations with teaching staff.

Students' Background

Both students were from Asia; they had been living and studying in Canada for two and three years, respectively. Therefore, they had to deal with doing a practicum in a different culture and language. This did influence this pilot study, as will be seen later. The two students had already successfully collaborated in different academic course assignments and clinical assignments, and appeared well-matched for this practicum. They expressed their pleasure in being able to do their first practicum together and were glad that one of the CEs, the author, was already familiar to them. In addition, they said they appreciated the opportunity to get exposure to the two different clinical populations this practicum would offer them.

General Practicum Expectations

During an initial meeting with the students and both CEs present, the students were introduced to the RPC model. Further, the collaborative nature of the practicum in the D/C and P/K settings was explained to them. They were informed that caseload distribution would be as follows: they were to share some cases equally in the two settings, while for other cases each student would take a leading role, but with continuing peer collaboration. Next, the McGill Supervision Contract was filled out. This involved identifying clinical, professional and personal objectives for each student by CEs and students. Some of the *clinical objectives* set up by both parties were to obtain experience with certain screening and assessment tools, as well as with therapy procedures and report writing. Some of the students' *professional and personal objectives* were: learning to interact with children in a Canadian context, becoming comfortable working in English, working on diminishing their accents, and learning to work as a team with a peer and the two CEs. Additional expectations addressed cultural differences that had arisen in previous discussions. For example, the students explained that in their respective cultures it is not appropriate to make eye contact with persons in positions of authority. In regard to working with young children, the students shared that

adults in their culture typically do not engage in play with children. Therefore, students requested the CEs to alert them when and how to change their interaction style with the children and the CEs both during service delivery (e.g., to what extent and how it was necessary to adapt to the children during verbal and general interactions) and when working as a team (e.g., eye contact, taking initiative). Students could decide for themselves how comfortable they were around these issues and try to make the necessary adjustments when ready.

Feedback Conferences and Ongoing Feedback

In the McGill Supervision Contract were also laid down specific time frames for formal feedback conferences (half an hour at the end of the day) and for ongoing feedback (at the beginning of the day and between sessions) between the students and each CE in the individual settings. The goals of these meetings were to review and plan sessions and to discuss cases and student performance on an ongoing basis. The modes of feedback were also laid out in the contract, namely, CE-, self-, and peer-evaluation.

Team Meetings

In addition to the ongoing 2:1 supervision in the two sites, at the end of each week one-hourly team meetings were held with both CEs and both students present. The objectives of these meetings were:

- setting up the students' professional and personal practicum objectives,
- monitoring the practicum objectives through CE-, self-, and peer-critiquing,
- carrying out, as a group (CEs and students), one evaluation for each of the students,
- ensuring congruence between the CEs regarding practicum expectations, and
- evaluating the project (CEs and students).

Applying the Model

Caseload Management

At the D/C, initially the students observed their CE providing speech-language therapy; then they started to take part jointly in the therapy sessions. Over time, they became more involved in conducting sessions by themselves, either jointly with the CE observing them, or each carrying out an activity with the CE and the other student observing. Toward the end of the practicum the students were conducting sessions solo while being observed by the CE and their peer.

In P/K the students started administering screenings immediately. They did not have a need to observe the CE first, because they were already familiar with the tool. Initially the students shared cases. They took joint responsibility for the children they screened. For a given child, one student would administer the screening tool, while the other one took a language sample, did phonetic transcription, made notes, and took care of the audio taping. For the next child, the students would reverse roles, and so on. Afterwards, the students would analyze the results together and make joint recommendations regarding Pass/Fail or further testing. The students were also expected together to write up the results for the screening report summaries. Initially the post-screening tasks were done together with the CE; however, increasingly students performed tasks jointly with less CE involvement, and towards the end of the practicum students took individual responsibility for their cases.

In both settings, at any stage of the practicum, the CE might step in, as appropriate, to model certain techniques (e.g., how to sub- or superstep), to take over if a student seemed uncertain as to how to proceed, or to deal with a child's behaviour.

Reciprocal Peer Coaching, Clinical Reasoning, and Self- and Peer-evaluation

Following sessions, RPC and clinical reasoning were implemented by inviting the students to give their impressions of the session; this increasingly also included self- and peer-critiquing. First, the student who had conducted the sessions was asked more general, open-ended questions; for example, "How did it go?," or "How did the child do?" Then she was asked more specific questions, for example: "Did it work?" "Why?" "Why not?" "What could you have done differently?" The other student was also invited to give her input on the client's performance. The following advantages associated with peer-critiquing were observed during this practicum:

- The student observer was implicitly required to participate in the discussion.
- Sharing feedback with each other became much more meaningful and added to the learning experience. For example, the students learned from each other different ways and techniques of working with a child.
- The students learned from each other, and from the CEs, how to conduct presentations.

Some disadvantages observed during peer-critiquing:

- One of the students was less forthcoming during discussions, which placed somewhat higher expectations on the other student. This improved, however, over time, at least in part as a result of the CEs facilitating responses from the quieter student.
- Feedback sessions were more time-consuming.

According to the CE at the D/C, in her previous experience of supervising students in a peer supervision model, sometimes students do not see the value of participating in giving feedback on another student's client. This appears to pertain to situations where they have not had any, or only minimal, direct contact with the other student's client. In this practicum, where the students shared cases, and which had a greater focus on RPC, the CE reported a significant increase in spontaneous collaboration between the student pair.

The RPC approach gave the students opportunity to enhance their clinical reasoning skills. For example, they had to differentiate the language skills of two children with

ESL, one of whom was suspected of presenting with an impairment in his first language as well. They then had to jointly develop appropriate recommendations for each child. This gave them the opportunity to engage in diagnostic reasoning, clinical problem-solving, and making clinical judgments and decisions. Meta-cognitive skills were also employed, as these cases allowed the students to reflect on their own experience as ESL learners. Further, the repetitive nature of the screenings in P/K gave the students the opportunity to engage in deductive reasoning. For example, after some practise with analyzing results, they started to make faster and more efficient clinical judgments, through the process of deductive (as opposed to inductive) reasoning, as to whether or not a child should be referred for further testing. Therefore, instead of needing to go through the results of the screening step-by-step, the students were able to make predictions based on their experience.

Another example of clinical reasoning occurred at the D/C practicum with a child who presented with selective mutism. To determine the therapy goals for this child, the students were asked by the CE to observe the child in different situations (e.g., free play, structured activities, outside) and with different people (e.g., peers and educators). Through joint observation, discussion, and analysis of language samples and body language, the students and CE concluded that the child was most verbal during fantasy play and when involved with another language impaired peer. Thus, problem-solving between the students and the CE, within an exploratory learning mode, resulted in the clinical decision that play therapy together with the preferred peer would be the most suitable intervention approach.

By the time the students had responsibility for individual cases, they were comfortable with this collaborative learning model. They continued to share their observations and insights with each other, with or without their CE present. This process of collaborating made it very natural for the students to consult with each other. It also made them less reliant on obtaining answers from their CE, which became a source of empowerment for them.

Self-critiquing took place, either as part of or following the debriefing session with the CE and the other student. The students were asked to address their own performance with reference to the objectives in the McGill Supervision Contract. The CE guided the students how to be specific in this process. As each goal was being addressed, the CE and students together developed criteria by which to measure their performance. For example, for student objective: "Adapting to the child's developmental and language levels," the CE would ask, "How would you go about doing this?" The students came up with the following suggestions: Criterion #1: "general strategies: using eye contact, a friendly voice/manner, showing an interest in the child, and using language appropriate to child's level." Criterion #2: "specific strategies; e.g., exploring in greater depth child's ability to follow directions."

Increasingly, students took the initiative in evaluating whether or not they had met the set criteria and modifying these if they proved too challenging or were met. For example, linked to the above objective "adapting to the child's developmental and language levels," one of the students asked the CE to help elicit a language sample from a taciturn child. At a later stage, one of the students wanted to add "behaviour management" to her objectives when she had met the goal of increasing her comfort level with P/K children.

The students were also invited to critique their peer by sharing their impressions of the other student's performance, using non-evaluative feedback. In line with the author's approaches to self-critiquing, the students were asked to (a) provide lots of positive points (e.g. "I liked how you kept the child on task by saying 'only three more pictures' and by using a lot of praise"); (b) focus discussion on how the other student's interaction with the child had impacted on the child's performance (e.g. "M. used the auxiliary verb 'is' every time when you stressed that word during modelling"); and (c) try to turn more negative feedback into constructive feedback (e.g. "A. responded better when you raised your voice").

The Formal Evaluation

At the mid-term evaluation, the students said they were comfortable for this to be done with all four parties present (students and both CEs). This may seem surprising, but they were likely aware that there were not going to be any real surprises at this point. That is, feedback had been ongoing with emphasis on self- and peer-critiquing, and the formal evaluation was based on the same criteria as the ongoing feedback. Furthermore, this process had prepared the students to do their own formal evaluation.

Prior to the mid-term evaluation the CEs asked the students to carry out a self-evaluation using the McGill Student Evaluation Form.[2] At the formal mid-term evaluation session, first each student's objectives in the McGill Supervision Contract were revisited. Discussion focussed on determining whether these were being addressed and in the process of being met at both practicum sites. Then for each student, the students and CEs went over the various items of the McGill Student Evaluation Form that the students had completed. The students had rated themselves on each item (rating scale 1-5). During the ensuing discussion the CEs also gave their ratings. Next, the students were asked to identify their overall strengths and areas for improvement. They were also asked to identify a few strengths in their peer; for example: "I noticed that you are speaking in a louder voice," or "You appear more comfortable during child interactions." Strengths and areas for improvement were subsequently listed in the summary section of the Student Evaluation Form. Finally, the objectives for the remaining portion of the practicum were targeted. The role of the CEs during the

[2] The McGill Student Evaluation Form is available from the author upon request.

formal evaluation, aside from co-rating the evaluation with the students, was to facilitate the evaluation process by inviting comments and seeking clarification (e.g., by asking students to be more specific or give examples). Further, and very importantly, areas of strength for each student that had been identified by either student or CEs were specifically reinforced by the CEs, as the students were on the whole modest in identifying areas of strength. For the CEs this was an important issue. The students deserve credit for their particular strengths; moreover, if limited ability to recognize strengths was a reason for not being forthcoming with areas of strength, then this could potentially undermine enhancement of self-evaluation and clinical reasoning skills. Ability to self-evaluate strengths appeared to be influenced culturally; during the mid-term evaluation the students indicated that self-praise is not looked upon favourably in their respective societies.

At the final evaluation, the students were given the choice as to whether they wanted the evaluation to take place individually or jointly. They both indicated to prefer an individual evaluation in order to be given the opportunity to have one-on-one access to each CE and to address personal issues. Therefore, during the final evaluation each CE met with each student separately. The final evaluation was also largely based on self-evaluation, and emphasis was placed on the students identifying their areas of strength. It appeared that both had become more comfortable with the latter, and additionally, both students expressed that their confidence had increased, which was apparent to the CEs.

Project Evaluation

Student Perspective

At the end of the project, the students were asked to share their perspectives on the experience. They were invited to comment in particular on what they had found successful about their practicum, and what aspects could be improved. The students repeated what they had said at the beginning of the practicum, namely that they had found it reassuring to do their practicum with another student, because of their similar cultural background and their familiarity with one another. They shared that they had learned a great deal due to the collaborative nature of the practicum—for example, starting out with shared cases and moving to solo responsibility for cases as their skills increased over the course of the practicum. The students appreciated having worked in two different clinic settings, which had given them exposure to a wide variety of communication disorders and different types of caseload management (screening/assessment vs. intervention). They also liked having had two different CEs with both similar and different clinical and supervision styles. They reported to have not found it confusing working with two CEs, because the regular joint team meetings of all involved had guarded for this.

When the CEs tried to solicit constructive feedback from the students about aspects of the project that could be improved, neither student was forthcoming. Instead, they turned potentially negative aspects into a positive light. For example, having to deal with cancellations at the D/C afforded them the opportunity to discuss hypothetical cases with the CE. Also, rather than resenting the repetitive nature of the screening practicum in P/K, they felt it gave them the opportunity to increase their comfort level with children, to practise decision-making about the children's speech-language status, and to learn to make appropriate recommendations. The students did offer some very important insights, however, which shed light on their seeming reluctance to offer constructive advice on the project. They said that it was somewhat awkward for them to provide this, because in their countries, people in authority positions must not be criticized. For the same reason, they had experienced some initial discomfort with the team approach, mostly because they had had to get used to being treated, to some degree, as equals (e.g., in regard to clinical decision-making). The students agreed that the team discussions had, nevertheless, formed an important part of their learning experience, as they had prepared them for professional interactions in their future clinical work. They added that they felt their overall confidence had increased by the end of the practicum. This was evidenced by enhanced participation during the final meeting.

CEs' Perspective

The CEs agreed that this pilot project had been, on the whole, successful. In regard to reciprocal peer coaching, its success can be attributed to the following prerequisites: (a) The students were open to this particular clinical education model, (b) they were well-matched, and (c) they had similar learning styles. Through the joint activities that they engaged in (e.g., assessment, intervention, goal setting, report writing, etc.), the students had the opportunity to develop clinical reasoning skills. These included problem-solving, making clinical decisions and judgments, and deductive reasoning. Regarding self-evaluation, the students, for reasons mentioned above, found it easier to identify negative points in their own performance, but seemed to do well identifying each other's strengths. Moreover, both showed improvement with pointing out their own strengths at the final evaluation.

In a future practicum it would be important to seek out opinions from other student pairs engaged in a similar clinical education model, particularly in regard to any inherent weaknesses of the model. For now, it can be concluded that the following factors contributed to the success of this pilot project: (a) the combination of two different practicum settings exposing the students to different clinical populations and responsibilities, (b) the students' preference for a collaborative peer practicum, (c) ongoing evaluation of the project, and (d) congruent CE styles in eliciting feedback and encouraging clinical reasoning.

Summary

A 2:1 student-to-CE ratio clinical practicum, utilizing reciprocal peer coaching, with an emphasis on self- and peer-evaluation is well suited to the concomitant

development of clinical reasoning skills. Key to success is keeping central in the process both the students' and clients' goals, together with the specifically determined criteria for both. By means of exchanging information and ideas during discussion throughout the service delivery and feedback process, the students will simultaneously learn about their clients', their own, and each other's progress. This collaborative practice opens up a professional exchange among equals that is likely to enhance client services on one hand and students' clinical reasoning skills on the other. Subsequently, this process may engender student growth in personal, clinical, and professional domains. Students will find themselves better prepared for subsequent clinical placements and eventually for their future careers as clinical decision-makers and collaborators with colleagues and other professionals. This model, which was inspired by and which elaborated upon a clinical education model employed in other health care professions, can easily be adapted to clinical student training for students in those disciplines. For university programs engaged in the clinical education of future health care professionals, including speech-language pathologists and audiologists, this clinical education model may help in dealing with shortages of clinical placements, and with the necessary prerequisites in place, it can offer both students and CEs an enjoyable, satisfying, and high-quality learning experience.

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References

Anderson, J. (1988). *The supervisor process in speech-language pathology and audiology*. Boston: College-Hill.

Boud, D. (1998). How to help students learn from experience. In K. Cox & C. Ewan (Eds.), *The medical teacher* (2nd ed., pp. 68-73). London: Churchill Livingstone.

Callan, C., O'Neill, D., & McAllister, L. (1993). Adventures in two to one supervision: Two students can be better than one. *Supervision*, 18, 15.

Claessen, J. (1997). A clinical practicum for speech-language pathology students in the day care setting. *Interaction*, 11, 29-31.

Damon, W., & Phelps, E. (1989). Critical distinctions among three approaches to peer education. *International Journal of Educational Research*, 13, 9-19.

Elstein, A., & Schwartz, A. (2000). Clinical reasoning in medicine. In J. Higgs & M. Jones (Eds.), *Clinical reasoning in the health professions* (2nd ed., pp. 95-106). Oxford: Butterworth and Heinemann Ltd.

Goldenberg, D., & Iwasiw, C. (1992). Reciprocal learning among students in the clinical area. *Nurse Educator*, 17, 27-29.

Higgs, J. (1992). Developing clinical reasoning competencies. *Physiotherapy*, 78, 575-581.

Higgs, J., & Jones, M. (1995). Clinical reasoning. In J. Higgs & M. Jones (Eds.), *Clinical reasoning in the health professions* (pp. 3-23). Oxford: Butterworth and Heinemann Ltd.

Higgs, J., & Jones, M. (2000). Clinical reasoning in the health professions. In J. Higgs & M. Jones (Eds.), *Clinical reasoning in the health professions* (2nd ed., pp. 3-14). Oxford: Butterworth and Heinemann Ltd.

Johnson, D., & Johnson, R. (1978). Cooperative, competitive, and individualistic learning. *Journal of Research and Development in Education*, 12, 3-15.

Johnson, D., & Johnson, R. (1987). Research shows the benefits of adult cooperation. *Educational Leadership*, 45, 27-30.

Jones, M., & Butler, D. (1991). Clinical reasoning. In: D.S. Butler (Ed.), *Mobilisation of the nervous system* (pp. 91-106). Melbourne: Churchill Livingstone.

Kleffner, J., & Dadian, T. (1997). Using collaborative learning in dental education. *Journal of Dental Education*, 61, 66-72.

Kurpius, D., & Christie, S. (1978). A Systematic and collaborative approach to problem solving. In: D. Kurpius (Ed.), *Learning: Making learning environments more effective*. Muncie, IN: Accelerated Development.

Ladyshewsky, R. (1993). Clinical teaching and the 2:1 student-to-clinical instructor ratio. *Journal of Physical Therapy Education*, 7, 31-35.

Ladyshewsky, R. (2000a). Developing health professionals through the use of reciprocal peer coaching. In: A. Herrmann and M.M. Kulski (Eds.), *Flexible futures in tertiary teaching. Proceedings of the 9th Annual Teaching Learning Forum*, 2-4 February 2000. Perth: Curtin University of Technology.

Ladyshewsky, R. (2000b). Peer-assisted learning in clinical education: a review of terms and learning principles. *Journal of Physical Therapy Education*, 14, 15-22.

Ladyshewsky, R. (2002, April). *Enhancing clinical reasoning through reciprocal peer coaching*. Workshop, McGill University, Montreal, Quebec.

Ladyshewsky, R., Baker, R., & Jones, M. (2000). Peer coaching to generate clinical reasoning skills. In J. Higgs & M. Jones (Eds.), *Clinical reasoning in the health professions* (2nd ed., pp. 283-289). Oxford: Butterworth and Heinemann Ltd.

Ladyshewsky, R., Barrie, S., & Drake V. (1998). A comparison of productivity and learning outcome in individual and cooperative physical therapy clinical education models. *Physical Therapy*, 78, 1288-1301.

Ladyshewsky, R., & Healey, E. (1992). *The 2:1 teaching model in clinical education: A manual for clinical instructors*. Unpublished manuscript, University of Toronto, Department of Rehabilitative Medicine, Division of Physical Therapy.

Lincoln, M., & McAllister, L. (1993). Peer learning in clinical education. *Medical Teacher*, 15, 17-25.

McAllister, L., & Rose, M. (2000). Speech-language pathology students: Learning clinical reasoning. In J. Higgs & M. Jones (Eds.). *Clinical reasoning in the health professions* (2nd ed., pp. 205-213). Oxford: Butterworth and Heinemann Ltd.

McCrea, E., & Brasseur, J. (2003). *The supervisory process in speech-language pathology and audiology*. Boston: Allyn & Bacon.

McFarlane, L., & Hagler, P. (1993). Collaborative treatment and learning teams in a university clinic. *Supervision*, 18, 13-14.

Neistadt, M. (1996). Teaching strategies for the development of clinical reasoning. *American Journal of Occupational Therapy*, 50, 676-684.

Westberg, J. (with Jason, H.). (2001). *Fostering reflection and providing feedback: Helping others learn from experience*. Springer Series on Medical Education. New York: NY, Springer Publishing Company, Inc.

Westberg, J., & Jason, H. (1991). *Providing constructive feedback: A CIS Guide BookÒ for Health Profession Teachers*. Center for Instructional Support.

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