

Fieldwork education: Putting supervisors' interpersonal communication to the test

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ABSTRACT

Various factors have an impact on the development of the clinical reasoning skills of occupational therapy students during their training. The aim of this study was to investigate how the interpersonal communication skills of the supervisors impact on their students' ability to learn clinical reasoning skills during their education in the physical field. Thirty final year students at the University of Pretoria and 14 supervisors from six different hospitals formed the study sample. A mixed research design was employed. Data were collected by means of focus groups and one-on-one interviews conducted with fieldwork educators and students on their inter-subjective experience of supervision. It was then analysed by a clinical psychologist using the Interpersonal Pattern Analysis diagnostic instrument, and finally compared with the grades students obtained for their clinical reasoning skills in the final practical exam in the physical field.

The findings of this study indicated that the supervisors of students who received good grades, were predominantly linear in their approach, showed limited empathy and confirmation, were rigid in their expectations and solved problems effectively. Supervisors of students who received lower grades were mainly circular in their approach, were flexible and partly empathetic, validated students and also solved problems effectively.

Regarding the interpersonal approach to human behaviour there is no one role or pattern of interaction that is more effective in all contexts. A style or a pattern that may be highly effective in one kind of relationship may be ineffective in another. What is emerging here is that a style which is characterised by flexibility and empathy is not necessarily an effective teaching style, whereas one characterised by a linear approach, rigidity and limited empathy may prove to be significantly more effective.

Key words: Fieldwork education, supervision, clinical reasoning, interpersonal pattern analysis, occupational therapy

Introduction

Effective fieldwork education is vital in shaping and enhancing the clinical reasoning skills required of final year occupational therapy students that will enable them to enter the profession^{1,2,3}. Clinical reasoning is a complex and multifaceted process⁴ and comprises interactive, scientific, narrative, pragmatic, ethical and conditional reasoning skills^{5,6}. This can only be developed by means of higher education in both the theory as well as the application of the theory during fieldwork education. The latter occurs under the supervision of a registered occupational therapist who is responsible for facilitating, among other professional behaviours, the creative and critical thinking skills of the students^{5,6}.

Various factors have an impact on the development of clinical reasoning skills among students during the fieldwork education⁴, and many authors have maintained that interpersonal communication between the supervisor and the student underpins successful fieldwork education^{3,7,8,9}. In her review of the relationship between the student and the clinical supervisor Barr for instance, was of the opinion that "a good relationship between student and supervisor is ... the foundation of any learning process"^{8:329}.

Literature Review

A study conducted as early as 1985 by Christie et al⁹ on students and their supervisors in America indicated that occupational therapy supervisors who are competent, flexible and enthusiastic, and who adapt their styles to meet each student's needs, were regarded as effective. Findings in the research of Hummell³ about the interpersonal communication skills of occupational therapy supervisors at one Australian university in 1997 were consistent with those of Christie et al⁹ and indicated that in addition effective supervisors showed empathy and were supportive of students who felt anxious about their fieldwork.

Research conducted by other health professionals had similar findings. Levy et al¹⁰, in a literature review which compared both clinical supervisors' and students' perceptions of helpful and hindering clinical instructor's characteristics in allied health care settings, found that students valued supervisors who enhanced their learning, had good communication skills, provided constructive feedback

and helped them to develop self-confidence. Stormont¹¹ studied the significance of interpersonal relationships in the supervision of clinical dieticians who did their graduate diploma in nutrition and dietetics by employing an orientation qualitative analysis based on the Myers-Briggs Type Indicator. The findings of this study revealed that students perceived an effective supervisor as tolerant, authoritative, helpful, friendly and understanding.

A four year longitudinal study of the perceptions of 108 OT and PT students of their fieldwork supervision was conducted between 2004 and 2007 by Kumbuzi et al¹². They found that occupational therapy students experienced their supervisors as encouraging and supportive, both on a social and an emotional level, but that the physiotherapy students experienced this to a lesser degree. However, supervisors tended to overrate students out of fear that giving a low grade might reflect their own inadequacies as a supervisor and may be ascribed as a cover-up for their own feelings¹². These studies, however, do not indicate how the supervisors' interpersonal communication skills had a bearing on the students' learning outcomes³, such as their ability to apply clinical reasoning skills at the conclusion of their fieldwork education.

Study Methods

Aim

The aim of this investigation was to determine which interpersonal communication factors in the supervisory relationship played a role in enhancing final year occupational therapy students' clinical reasoning skills during their physical fieldwork education. This was done by comparing the interpersonal communication pattern of supervisors with a measurable outcome, i.e. how the students performed in their final practical exam.

Study design

A mixed method research design was employed in the larger study of which this paper describes only a part. Data were initially generated using a qualitative approach, the results were then aggregated and presented quantitatively and the findings were qualitatively assessed. The very nature of the investigation required the application of both qualitative and quantitative techniques for the

following reasons:

- ❖ The initial data gathering could only be done through a qualitative investigation.
- ❖ Comparing the findings thus obtained with exam grades, given the complexity of more than one supervisor per student and more than one student per supervisor, required some quantitative analysis, albeit very simple averages and weighted averages, in the next phase of the investigation.

Measuring Instrument

The Interpersonal Pattern Analysis (IPA), a therapeutic diagnostic tool that comprises 16 interpersonal variables which was developed by Vorster¹³, was used to analyse the audio data obtained from the focus groups and one-on-one interviews. To perform the IPA analysis an independent clinical psychologist was employed. This instrument which measures how individuals impact on each other within their interpersonal relationships was empirically investigated in a separate study and found to be valid¹⁴.

Study sample

The study population consisted of the following:

- ❖ Supervisor participants who were recruited by means of an information leaflet distributed at the relevant hospitals hosting students for clinical practice. Twenty one occupational therapists registered with the SA Health Professions Council were contacted and of these, 19 consented to participate in the study. However only 14 were ultimately available to participate in the study and to attend the focus groups and one-on-one interviews from which the IPA for each was derived. The five supervisors who dropped out were mostly responsible for average performing students rather than the high or low performers and their omission was unlikely to have impacted on the findings. Each participant was required to sign an informed consent form. See Table I.
- ❖ Thirty final year occupational therapy students out of a class of 36 from the University of Pretoria. Three students chose not to participate in the study, owing to personal circumstances. A further three were not included in the investigation as a common discrepancy emerged, possibly cultural in origin, in the end-of-term grades given by their supervisors which could not be satisfactorily explained or quantified. Each of these participants was also required to sign an informed consent form. See Table I.

Table I: Demographic characteristics of the sample

Supervisors		Frequency	Percentage
Workplace	State hospital	7	50%
	Private hospital	7	50%
Gender	Female	14	100%
Race	African	0	0%
	Asian	1	7%
	Caucasian	13	93%
Age	23-24	2	14.3%
	25-30	8	57.1%
	31-40	3	21.4%
	41-65	1	7.1%
Students		Frequency	Percentage
Workplace	State hospital	20	66.7%
	Private hospital	10	33.3%
Gender	Female	30	100%
Race	African	0	0%
	Asian	0	0%
	Caucasian	30	100%
Age	≤23	24	80%
	24-26	5	16.7%
	>26	1	3.3%

Ethical approval

Ethical approval was obtained from the Ethics and Research Committee of the Faculty of Health Sciences at the University of Pretoria, from CEOs of both private and public hospitals which employed the occupational therapists, and finally from the Head of the Department of Occupational Therapy at the University of Pretoria whose final year students participated in the study.

Data collection

The data collection presented in this paper is limited to only one objective of a larger study, viz. comparison of students' grades for their clinical reasoning in the final practical exam in the physical field with the interpersonal communication patterns of their supervisors at the various physical fieldwork placements.

Data were collected from the supervisors by means of interaction with the supervisors in focus groups and in one-on-one interviews.

Focus groups are carefully planned group discussions aimed at generating information from participants who share a similar experience^{15,16}. Attendance of the one hour sessions was completely voluntary. The focus groups started with an introduction and clarification of terms and a warm-up exercise, followed by a discussion which the moderator facilitated using an interview guide covering specific areas by means of open-ended questions, and ended with closing of the group. Semi-structured one-on-one interviews were mainly held with those supervisors who did not participate to the full in the focus groups because of group dynamics or because some raised specific issues that were worthwhile pursuing further outside the group. Recruitment was similar to the process followed in the focus groups and attendance was likewise voluntary. The interviews were semi-structured in that pre-determined entry questions were posed to determine in a conversational way how supervisors perceived the supervisory relationship as well as the teaching or learning of clinical reasoning skills.

Although the aim was to constitute focus groups of about eight people at the end of each of the three fieldwork blocks the actual attendance in the focus groups was as depicted in Table II: Participants in focus groups and one-on-one interviews.

Table II: Participants in focus groups and one-on-one interviews

Block	SUPERVISORS	
	Focus groups	One-on-one interviews
1	7	4
2	4+2 =6*	5
3	3+2=5*	3
	14+2 = 16	12

*2 supervisors each attended two focus groups

The focus groups and one-on-one interviews were all audio recorded using state of the art digital recording equipment.

Data from the students were collected at the time of their practical final exams which was conducted by both an internal examiner of the University of Pretoria and an external examiner from another university. Grades were allocated according to a rubric specifically aimed at determining the students' ability in clinical reasoning commensurate with what should reasonably be expected from an entry level therapist.

Data analysis

Students' grades for their clinical reasoning in the practical exam in the physical field

The students' grades for their practical exam were ranked from highest to lowest and ranged from 77% down to 48%. Students were grouped according to their grades. Those who obtained between 70% and 77% were regarded as innovative and original

in their ability to perform clinical reasoning, whereas those who obtained grades between 60% and 69% were regarded as having both a good comprehension of patients' problems and in applying clinical reasoning skills. The performances of students who obtained grades between 50% and 59% for clinical reasoning were regarded as satisfactory. For ease of analysis the single student who failed with a grade of 48% and the IPA of the relevant supervisors, were included with the last group. The frequency of distribution of the exam grades is depicted in Figure 1.

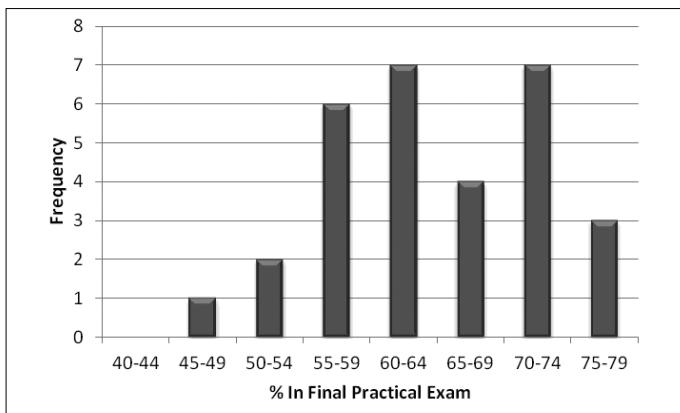


Figure 1: Frequency distribution of examination grades

Interpersonal pattern analysis (IPA)

The supervisors' inter-subjective experiences about the students during the latter's fieldwork education - which were captured electronically during the one-on-one interviews - and their participation in the focus groups were subsequently analysed by the clinical psychologist in order to determine each individual supervisor's interpersonal communication patterns by means of the IPA diagnostic instrument.

Using a Microsoft Excel® spread sheet, the data from the individual supervisors' IPA's were weighted to reflect the actual exposure of the students in each of the three student groups to the supervisors responsible for each group, and based on the students' performance in the practical exam. The weighted average values of the IPA variables experienced by each group of students were then determined.

Findings

Among the 16 variables of the IPA that was investigated by the clinical psychologist on the supervisors, only five interpersonal variables were identified as relevant for this study. They were the following:

- ❖ A circular versus a linear approach
- ❖ Level of empathy
- ❖ Degree of interpersonal flexibility or rigidity
- ❖ Problem solving skills
- ❖ Giving confirmation (validation)

The supervisors of students in each of the three grading groups exhibited specific IPA traits. However, as students had more than one supervisor, and a supervisor more than one student, the weighted aggregate IPA profiles, based on the exposure to the various supervisors experienced by each group, were included in the findings. In most cases the difference in outcome was slight, but as the weighted average IPA is more accurate it was used in the subsequent analysis. The aggregate supervisors' IPA for the three groups of students will be set out next. Some of the salient comments made by the clinical psychologist in his evaluation of the variables in respect of individual supervisors are also included and provided in the boxes attached to each variable.

a. Comparison of students' grades in the 70% range with the IPAs' of their supervisors

Table III provides an overview of the results of the interpersonal pattern analysis obtained for each of the variables of approach, level of empathy, degree of flexibility, problem solving and confirmation.

Table III: Interpersonal Pattern Analysis of supervisors with students in the 70% range

Supervisors: O, H, X, B, P, D, E, M, N (n = 9)			
IPA Variable	Category	Profile of supervisors: Individuals	Weighted
1. Approach	Circular	2 22.2%	28.6%
	Partially	2 22.2%	9.5%
	Linear	5 55.6%	61.9%
2. Level of empathy	Emphatic	1 11.1%	14.3%
	Partially	3 33.3%	23.8%
	Judgmental	5 55.6%	61.9%
3. Degree of flexibility	Flexible	3 33.3%	33.3%
	Partially	2 22.2%	19.0%
	Rigid	4 44.4%	47.6%
4. Problem solving	Solved	5 55.6%	57.1%
	Partially	3 33.3%	28.6%
	None	1 11.1%	14.3%
5. Confirmation	Gave	4 44.4%	42.9%
	Partially gave	1 11.1%	14.3%
	Limited	4 44.4%	42.9%

❖ **Variable One** - As a group, supervisors of high performing students were considerably more linear than circular in their approach.

Probably [linear], due to a limited ability to initiate or mobilise (Participant O).

She seems to be opinionated, instructive, domineering and blames (subtly) (Participant B).

She would seemingly want things done her way (Participant E).

❖ **Variable Two** - Supervisors for this group of students were mostly judgmental and showed limited empathy.

She seems to be blaming which indicates limited empathy (Participant O).

[Empathy] questionable, she seems to be stuck in routine lowering the empathy (Participant P).

She would probably expect fewer problems and would not want to deal with them if they arise (Participant E).

❖ **Variable Three** - These supervisors were noticeably more rigid than flexible.

She seems to be set in her ways and routines (Participant P).

Wants things her way (Participant E).

She will be more comfortable with clear structure - as she sees it (Participant X).

❖ **Variable Four** - This group of supervisors exhibited effective problem solving skills.

Yes, she probably deals with problems in a calm yet structured and effective manner (Participant H).

Well developed within her frame of reference (Participant X).

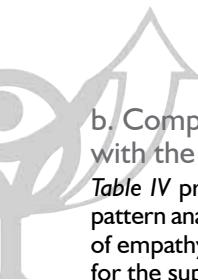
Yes, she knows what to do (Participant B).

❖ **Variable Five** - This group of supervisors gave only average confirmation.

Will give confirmation within her frame of reference, however, resistance and challenge will probably not be accepted (Participant X).

No [limited confirmation], due to her lack of positive regard and tendency to be impatient (Participant B).

Yes, but at times she probably comes across as too direct, but her message will be clear (Participant N).



b. Comparison of students' grades in the 60% range with the IPAs' of their supervisors

Table IV provides an overview of the results of the interpersonal pattern analysis obtained for each of the variables of approach, level of empathy, degree of flexibility, problem solving and confirmation for the supervisors of the students who fell in the 60% range.

Table IV: Interpersonal Pattern Analysis of supervisors with students in the 60% range

Supervisors: O, H, X, A, G, B, F, C, D, E (n = 10)			
IPA Variable	Category	Profile of supervisors: Individuals	Weighted
1. Approach	Circular	5 50.0%	50.0%
	Partially	1 10.0%	5.0%
	Linear	4 40.0%	45.0%
2. Level of empathy	Emphatic	4 40.0%	40.0%
	Partially	2 20.0%	15.0%
	Judgmental	4 40.0%	45.0%
3. Degree of flexibility	Flexible	5 50.0%	50.0%
	Partially	2 20.0%	20.0%
	Rigid	3 30.0%	30.0%
4. Problem solving	Solved	6 60.0%	55.0%
	Partially	2 20.0%	20.0%
	None	2 20.0%	25.0%
5. Confirmation	Gave	5 50.0%	50.0%
	Partially gave	2 20.0%	15.0%
	Limited	3 30.0%	35.0%

❖ **Variable One** - Supervisors of this group of students were slightly more circular than linear in their approach.

She is aware of her impact on others (Participant H). Her low level of assertiveness and feeling of incompetence would not allow her to be linear (Participant G).

Yes, she will probably take feedback and implement it (Participant D).

❖ **Variable Two** - These supervisors showed some empathy but not to a high degree.

She can place herself in the position of the student but tends to be sympathetic (Participant A).

Yes, her understanding of the students' position and frustration is clear and comprehensive (Participant C).

❖ **Variable Three** - These supervisors were more flexible than rigid.

Due to her lack of self-confidence she would be flexible and thus not be able to take a stand (Participant G).

Yes, due to her awareness of what students go through she adjusts her approach to them (Participant C).

Yes, she understands other's frustrations and will probably see the effect of her own behaviour (Participant D).

❖ **Variable Four** – These supervisors exhibited effective problem solving skills.

Yes she knows what to do but her ability to communicate these skills can sometimes be limited (Participant F).

Yes, she probably deals with problems in a calm yet effective manner (Participant C).

Yes, but she can be rigid in her problem solving skills (Participant D).

❖ **Variable Five** - These supervisors gave reasonable confirmation.

She is direct in her feedback (Participant B).

Communicates her understanding (Participant H).

She gives confirmation since she identifies with the difficulty of the situation (Participant A).

a. Comparison of students' grades in the 50% range with the IPAs' of their supervisors

Table V provides an overview of the results of the interpersonal pattern analysis obtained for each of the variables of approach, level of empathy, degree of flexibility, problem solving and confirmation for the supervisors of the students who fell in the 50% range.

Table V: Interpersonal Pattern Analysis of supervisors with students in the 50% range

Supervisors: C, D, E, L, M, N (n=6)			
IPA Variable	Category	Profile of supervisors: Individuals	Weighted
Approach	Circular	3 50.0%	41.7%
	Partially	2 33.3%	50.0%
	Linear	1 16.7%	8.3%
Level of empathy	Emphatic	2 33.3%	33.3%
	Partially	3 50.0%	58.3%
	Judgmental	1 16.7%	8.3%
Degree of flexibility	Flexible	4 66.7%	66.7%
	Partially	1 16.7%	25.0%
	Rigid	1 16.7%	8.3%
Problem solving	Solved	4 66.7%	66.7%
	Partial	2 33.3%	33.3%
	None		
Confirmation	Gave	4 66.7%	66.7%
	Partially gave	1 16.7%	8.3%
	Limited	1 16.7%	25.0%

❖ **Variable One** - Supervisors of this group of students were predominantly circular or partially so in their approach.

She identifies accurately with the students' experiences, and takes responsibility for her own effects to situations (Participant L).

She is aware of her input (Participant D).

❖ **Variable Two** - These supervisors showed empathy and mostly partial empathy but were very low on being judgmental.

Partially, she tends to blame and be limited in understanding, but not to a high degree (Participant D).

Her tendency to be uncertain can limit her empathy (Participant M).

❖ **Variable Three** - These supervisors were largely flexible or partially so rather than rigid.

Due to her awareness of what the students go through she adjusts her approach to them (Participant L).

She adjusts her approach according to the students' needs (Participant D).

Flexible but professionally so (Participant N).

❖ **Variable Four** – This group of supervisors possessed effective problem solving skills.

Yes, she probably deals with problems in a calm yet effective manner (Participant L).

Yes, her direct and firm style will probably make her quick in assessing thought and reacting to problems. The latter will probably motivate a student to go to her for help (Participant N).

❖ **Variable Five** - These supervisors tended to give confirmation.

*Yes, but direct confrontation seems to make her uncomfortable (Participant D).
She identifies with others and can communicate it (Participant L).*

Summary

The weighted average showed that the supervisors of students who obtained grades in the 70% range were predominantly linear (61.9%) in their approach, were judgmental (61.9%), were rigid (47.6%), solved problems effectively (57.1%) and gave confirmation (42.9%).

Supervisors of students in the 60% range were circular (45%) in their approach, showed limited empathy (45%) were flexible (30%), effectively solved problems (55%) and gave confirmation (50%).

The weighted average showed that the supervisors of students who obtained grades in the 50% range were mostly partly circular in their approach (50%), were partly empathetic (58.3%), were flexible (66.7%), solved problems effectively (66.7%) and gave confirmation (66.7%). These findings are depicted in Figure 2.

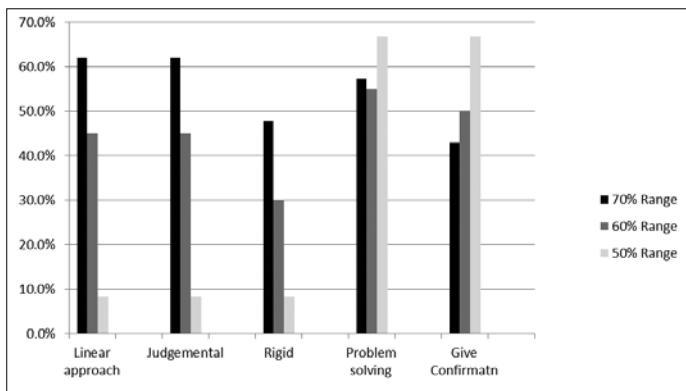


Figure 2: Weighted IPA profiles of supervisors for three groups of students

Students' total academic performance

In comparing the practical exam grades of the 30 students with their general academic performance for the year (practical exam contribution excluded), it was found that the correlation is fairly low at 0.375. This tends to eliminate the possibility that the better students ended up by chance with those supervisors exhibiting specific behavioural traits and thus would seem to indicate that the supervisors' interaction and communication with the students played a significant role in their learning experience and performance in the practical exam. The comparison is shown in Figure 3.

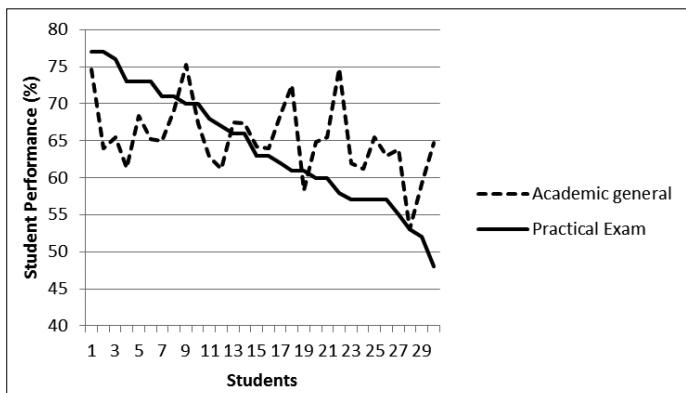


Figure 3: Practical exam mark compared with general academic performance excluding practical exam contribution

As a point of interest, although not covered in detail in this paper, it is worth noting that supervisors of high performing students (70% range) tended to underrate the students by 4.8%, and

the very high performers even more so, compared to the exam grades in their written reports at the end of term. Students in the mid-range (60%) were rated less than 4% higher than their exam grades but students in the lower (50%) range were overrated by 22% compared to their exam grades.

Discussion

A total of 14 supervisors' interpersonal communication behaviours were analysed and compared with the grades of 30 of their students to determine the role interpersonal communication plays during the students' physical fieldwork education. Interpersonal communication skills were analysed by a clinical psychologist by means of the IPA instrument.

The findings from the data suggest that those supervisors whose students obtained high grades for clinical reasoning in occupational therapy were predominately linear in their approach, showed limited empathy, gave confirmation sparingly, were rigid with regards to their expectations and control their environment effectively. These findings however, are in sharp contrast with those of Christie et al.⁹, Hummel³, Levy et al.¹⁰, Stormont¹¹ and Kumbuji et al.¹² as described in the literature, although the latter's findings concerning the less effective supervisors' tendency to overrate students is supported. These studies however did not investigate the relationship between supervisors and their students' grades or learning outcomes. They seem to be mostly based on the views of the students which by its very nature tend to be subjective. Possible arguments that could be put forward to explain this discrepancy will now be discussed.

The effective supervisor, who is also an exponent of her field of practice, is norm orientated, standard driven and expects students to render quality occupational therapy which is in line with her own ethical reasoning. Her first priority is the well-being of the patient and she sees the student as being there to learn. She will therefore not be flexible and accommodating, but rather take a rigid stance and instruct in a linear fashion.

Furthermore she understands her role as teacher and observes the same teaching stages proposed by Barr⁸ as follows:

- ❖ The supervisor demonstrates an assessment or treatment procedure while the student observes.
- ❖ The supervisor discusses the outcomes of the assessment or treatment with the student.
- ❖ The student demonstrates while the supervisor observes and coaches the student.
- ❖ The student receives feedback on her clinical reasoning from the supervisor.
- ❖ The student is left to work independently once she has mastered the necessary clinical reasoning skills.

The most effective way of ensuring that the students' clinical reasoning is up to standard, when they do what they ought to do, is by giving them timely, corrective and unambiguous feedback^{17,18,19,20}. The emotional impact critical feedback might have on the student may not necessarily be a high priority for the supervisor, though it could certainly be uncomfortable for the student. However, based on the students' performance in the final exam, this approach would seem to be effective. In contrast, a very empathetic attitude towards them could reduce the pressure on the students to perform.

Conclusion

In respect of the interpersonal approach to human behaviour there is no one role or pattern of interaction that is more effective in all contexts. A style or a pattern that might be highly effective in one kind of relationship may be ineffective in another. What is emerging here is that a style which is characterised by flexibility and empathy does not seem to be an effective teaching style, whereas a style which is the direct opposite and is characterised by rigidity and limited empathy may prove to be significantly more effective.

It is recommended that future studies also focus on the IPA of students in order to view the relationship from both perspectives.

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