Interpersonal behaviour in one-to-one instrumental lessons: an observational analysis

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Biographical Note

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Abstract

This paper explores patterns of interpersonal behaviour amongst teachers and pupils during one-to-one instrumental lessons. It was hypothesized that these patterns might differ in systematic ways, according to an existing model of six interaction 'types' developed within a systems theory perspective and based on measures of interpersonal control and responsiveness. Eleven violin teachers and their pupils aged 10 to 16 were observed. Digital recordings of 23 one-to-one lessons were analysed using the overarching categories of teacher talk, teacher questioning, scaffolding, pupil talk and pupil playing. Behaviour style was found to correspond with the model of interpersonal interaction in instrumental teaching. Highly directive teachers were found to engage most often in scaffolding, while the most responsive teachers allowed space for the pupil voice to be heard and provided more feedback that was attributed to specific strategies or effort. These findings suggest that teachers and pupils may become entrenched in fixed patterns of interaction behaviour that potentially place constraints on teaching and learning outcomes. The implications for practice lie in teachers' awareness and reflections on their own interaction behaviours. Being cognizant of fixed patterns of behaviour, teachers may choose to re-frame their style of interaction, thus effecting positive changes in teaching and learning.

Introduction

The research reported in this paper forms part of a larger study that investigated interpersonal interaction amongst teachers, pupils and parents in the context of one-to-one instrumental lessons (Creech, 2006). The overarching purpose of the research reported here is to address the question of what instrumental teachers can learn to *do* in lessons, in order to maximise positive learning outcomes. For this research, positive learning outcomes were not confined to achievement; rather, positive outcomes were conceptualised in a broader sense, including motivation, self efficacy, self esteem, satisfaction, enjoyment of music *and* attainment. This paper focuses on patterns of interpersonal behaviour amongst teachers and their pupils, investigating whether teacher and pupil behaviours in instrumental lessons might differ in systematic ways that correspond with six interpersonal interaction 'types' that were identified in the larger study (Creech, 2009).

Background

Several researchers have, over the past three decades, used observational methods to investigate teacher and pupil behaviour in instrumental teaching, both in classroom and one-to-one contexts (see Rosenshine et al., 2002 and Hallam, 2006, for reviews). Effective teaching was conceptualised by Yarbrough & Price (1989) as comprising sequential units of teaching that began with teacher presentation of a task, followed by student response and engagement with the task and concluding with teacher feedback in relation to the student response. Siebenaler (1997) carried out an observational study, focusing on 13 piano teachers who each recruited one adult student (aged 24+) and one child student (aged 7-11) to take part. A total of 78 one-to-one piano lessons were video-taped and the teacher and student behaviours

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were analysed. A key finding was that long stretches of uninterrupted student performance 'often indicated a struggling student without appropriate teacher intervention' (Siebenaler, 1997, p. 17). Siebenaler concluded that expert teachers, in comparison with non-expert teachers, provided faster-paced sequences of instruction-engagement-feedback, characterised by rapid alternation between teacher feedback and student response.

Duke & Henninger (1998) carried out an experimental study, where two groups of beginner recorder students were taught to play a simple melody by either a) a directive method, focusing on commands describing how the student should perform in a subsequent attempt, or b) a negative feedback method, focusing on identifying performance errors followed by directions for correcting the performance. The participants included 25 fifth and sixth grade children and 25 college undergraduates. Following individual lessons, the recorder students completed a short questionnaire that assessed their self efficacy and positive attitudes towards learning the recorder. The researchers reported that the novice recorder players had positive attitudes about having successfully achieved their musical goals and demonstrated high self efficacy, irrespective of the teaching approach. The researchers concluded that the salient factor that underpinned positive student experience had been the successful accomplishment of music goals. However, in both conditions the recorder students had frequent opportunities to respond, the rate of positive teacher feedback was high and, where negative evaluations of previous attempts were offered by the teacher, these were accompanied by specific corrective feedback.

In a follow-up study, Duke & Henninger (2002) investigated trainee teacher perceptions of the lessons, testing whether the directive or negative feedback conditions influenced perceptions of the effectiveness of the recorded lessons. Fifty-one undergraduate music teacher trainees took part, viewing one 'directive' lessons and one 'negative feedback' lesson with a fifth grade recorder student. The trainee teachers rated both lessons highly positively and again the researchers reported that the feedback condition did not influence perceptions of positive experiences of learning. Expert teachers, according to the findings from this study, gave positive and negative feedback at high rates and offered students many opportunities to respond to feedback and make improvements in their performance tasks

The concept of scaffolding, whereby students are supported by knowledgeable others (including teachers, peers or parents) has been extensively researched in the wider context of education (for example, Needham, 2003). Scaffolding occurs when teachers provide appropriate support that enables students to move beyond their current skill or knowledge, in small and attainable steps. A typology of scaffolding, comprising six stages, was proposed by Wood, Bruner & Ross (1975). Following observations of 30 pre-school children who were guided by their teacher in a block-building jigsaw task, the authors theorized that scaffolding was a process involving several tutor functions. The first of these was 'recruitment', whereby the tutor's task was to enlist the problem-solvers' interest and adherence to the task requirements. The second function was labelled 'reduction of degrees of freedom' and involved simplifying the task to the extent that the learner could recognise whether he or she had fulfilled each step of the task requirements. According to this model of

scaffolding, further tutor functions included 'direct maintenance', 'marking critical features' and 'frustration control'. Direct maintenance referred to the tutor's role in keeping the learner focused on particular objectives and motivating the learner to risk moving out of their comfort zone to a next step. Marking critical features represented the process by which tutors accentuated certain relevant features of a task, drawing attention to discrepancies between the learner's attempt and the desired end product. Tutors also provided scaffolding for learning by offering encouragement and support to alleviate stress or frustration with the task. Finally, the authors identified demonstration or modelling as an important process in scaffolding.

Kennel (2002) proposed that the model proposed by Wood, Bruner and Ross (1975), applied in the context of instrumental learning, would include recruitment strategies that synchronised the attention of pupil and teacher, marking critical features of tasks, manipulating the difficulty level of tasks, modeling performance, setting goals and providing support for the pupil by engaging in dialogue intended to reduce frustration.

In order to maximise the potential for effective learning, instrumental pupils need teachers to scaffold their development in a range 'aural, cognitive, technical, musical communication and performing skills' (Hallam, 2006, p. 169). In this vein, Colprit (2000) reported that expert teachers, conceptualised as those who accomplished positive change in their students' performances, structured their lessons in small attainable steps that led sequentially to the attainment of goals. Colprit makes the

salient point that the complexity of the teaching-learning process makes identification of specific features of effective teaching problematic.

Diagnostic skills and the use of modelling may both contribute to successful scaffolding of student learning, while the effectiveness of these strategies may be mediated by the teacher's musical competence and teacher affect (Brand, 1984; Saunders, 1990). However, although there may be some cultural differences in teacher and student behaviour (Benson & Fung, 2005), observational evidence from the USA (for example, Kostka, 1984, Kennell, 1992) suggests that the most frequent teacher behaviour is directive verbal diagnosis, with little time devoted to modelling. Salzberg (1980) contributed some evidence to support the view that verbal diagnosis has an important role to play in scaffolding instrumental learning, reporting that university student string players produced more accurate intonation in response to verbal feedback than following modelled performance. Nevertheless, a substantial body of evidence supports the view that effective learning amongst instrumental students is supported when teachers model processes such as identifying difficulties and generating problem solving strategies, as well as when they model technical or musical aspects of desired performances (see, for example, Dickey, 1991, 1992; Kostka, 1984; Hallam, 2006).

Praise, too, has been found to be an effective and enduring form of scaffolding, but most notably when accompanied by physical, 'hands-on' corrective prompts. Salzberg & Salzberg (1981) carried out an experiment with five elementary school-aged violin pupils, comparing corrective feedback with praise. The researchers reported that praise was always as effective as corrective feedback and that when

physical prompts were used in conjunction with praise, for extended periods, the effects were positive and sustained.

The quality of teacher feedback, in particular, has been the focus of much research concerned with teacher-student interaction. There is a wealth of empirical evidence in many diverse educational contexts to support the view that students who develop sustained and deep engagement in a given domain are supported in making attributions for success to effort and the correct use of learning strategies (Fryer & Elliot, 2008).

In a musical context Colprit (2000) and Duke (2002) have noted that the quality of teacher talk may distinguish expert teachers from their less-expert counterparts. In particular, expert teachers have been found to provide specific attributions for student performance on tasks, for example making detailed reference to tone quality, intonation, expression, phrasing or articulation.

In summary, the evidence strongly suggests that instrumental learning is supported when teachers implement a range of scaffolding strategies, including specific, honest and positive feedback and verbal diagnosis accompanied by high quality modelling and hands-on corrective prompts (for example, Colprit, 2000; Hallam, 2006; Kennell, 2002).

Methods
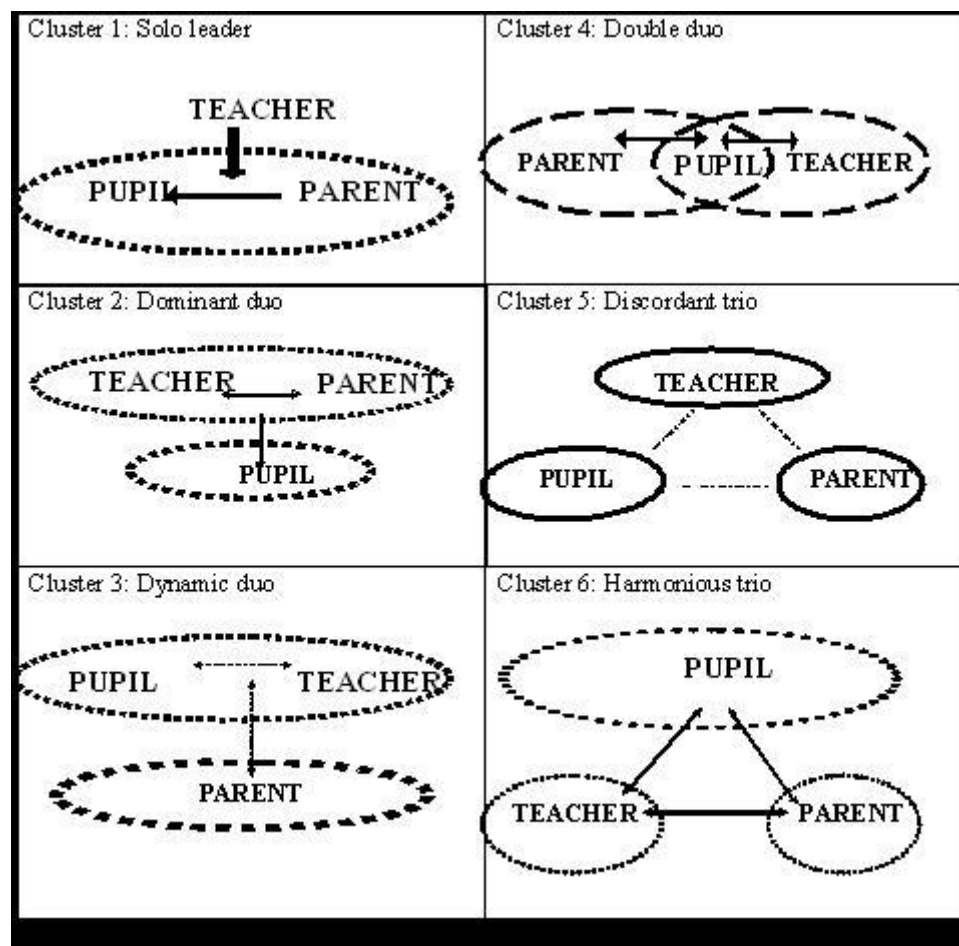
Typology of interpersonal interaction

As noted above, the research reported here forms part of a larger study (Creech, 2006) that explored the contribution of interpersonal interaction to teaching and learning outcomes amongst 263 violin teachers and their pupils. The teachers taught in private studios, independent schools, state funded music services and junior conservatoires, with pupils aged 8-18 whose levels of ability ranged from beginner to diploma level. Their teaching experience ranged from one year to over 30 years; 50 per cent had over 15 years of experience. Several teaching methods and approaches were represented; 177 (67%) teachers taught by 'no specific method', 49 (19%) taught by the Suzuki method, and the remaining 37 (14%) taught by a range of other specific methods. Some teachers had more than one pupil who participated in the research. In total, 337 pupils and their parents took part in the study, thus making it possible to examine interpersonal interactions amongst 337 teacher-pupil-parent trios.

A model of six interpersonal interaction types was developed, using quantitative and qualitative methods to explore the teacher-pupil-parent interactions (Figure 1). The model was developed within a systems theory perspective and based on measures of interpersonal control and responsiveness, in-depth interviews and observations of lessons (see Creech, 2009 for full details of development of the model). Systems theory is characterized by concepts of reciprocity and holism (Tubbs, 1984). Systems theorists place an emphasis on understanding the constituent parts of a system in relation to the dynamic properties of the whole unit (Pianta and Walsh, 1996), which in the context of this study was conceptualised as the teacher-pupil-parent partnership. Circular communication processes develop which not only consist of behaviour but which determine behaviour as well. 'When individuals

communicate, their behaviours will mutually influence each other' (Van Tartwijk et al., 1998: 608). From this perspective, an individual's particular interpersonal style may be seen as both causing and resulting from a web of complex interaction. For example, Creech and Hallam (2003) describe 'collective efficacy', whereby teachers who were secure in their perceived capabilities invited and supported parental involvement, which in turn fostered self-efficacious beliefs and supportive behaviours amongst parents and pupils.

Figure 1: Teacher-pupil-parent interaction types in instrumental learning

The six different interpersonal interaction types identified in the larger study (see Figure 1) represented diverse interpersonal relationships. Types 1, 2 and 4 were characterized by a didactic master-apprentice framework. Types 1, 2 and 3 were each conceptualised as a primary dyad plus a third party, while Type 4 was

represented as two primary dyads connected by one common member. Type 5, the least successful in terms of teaching and learning outcomes that included attainment, motivation, self-efficacy, self-esteem, enjoyment and satisfaction, was characterized by very little communication between any two of the three individuals. In contrast, Type 6 was characterized by reciprocity amongst all three participants, with teachers who were receptive, caring and yet supportive of autonomous learning. The highest musical attainment levels were found amongst Type 6. However, While no single type of interaction consistently produced the best outcomes for teachers, pupils and parents alike, overall the most effective teaching and learning outcomes (noted above) were found amongst those classified as 'harmonious trios' (Type 6) representing a parent-professional-child partnership characterised by reciprocal communication, mutual respect and child centred goals (Creech, 2006).

Video observations

Case study examples representing each of the six interpersonal types were identified as participants for the observational study. To some extent this was a self-selecting sample as participants were drawn from a pool of 98 teacher-pupil-parent trios who had indicated on the initial questionnaire their willingness to participate in observations. The case study participants were selected as far as possible to be representative of the gender balance, pupil age and teaching methods found amongst the larger sample. Eleven violin teachers (8 female and 3 male) and their pupils aged 8 to 16 (15 female and 8 male) were observed and digitally recorded during a total of 23 one-to-one lessons (Table 1). Six teachers taught by 'no specific method', three identified themselves as Suzuki teachers and two taught by 'other specific' methods. The observed lessons all took place at the time and venue where

they 'normally' happened on a weekly basis, including private studios, independent

schools, state sector schools, Saturday music centres and one junior conservatoire.

Table 1: Participants in the video observations

Teacher Gender	Teaching Method	Venue	Pupil gender	Pupil age	Type
Female	Suzuki	Private studio	F	12	6
			M	16	6
		Private studio	M	14	5
			F	10	4
			M	13	3
		Private studio	F	14	4
			M	12	4
	No particular method	Private studio	F	10	5
			F	15	5
		Private studio	F	11	2
			M	8	2
			F	12	2
		Independent school	M	11	1
			F	9	1
		Private studio	F	10	4
			F	16	3
	Other specific	Junior Conservatoire	M	11	3
Male	No particular method	Junior Conservatoire	F	12	4
			F	11	3
		Saturday music service provision	F	13	6
			F	14	6
			F	12	6
	Other specific	State school	M	15	1

Digital recordings of thirty minute lesson segments were analysed with the aid of the

software package Scribe 4.1.1 (Duke & Stammen, 2009), first using an event

sampling approach, using a pre-defined checklist of lesson behaviour (see Table 2)

derived from Hallam (1998).

Table 2: Checklist of observed lesson behaviours

TEACHER QUESTIONING	open question
	seek agreement
	check understanding

TEACHER TALK	technique
	musical
	direction to play
	diagnosis
	attributional feedback
	non-attributional approval
	non-attributional disapproval
	humour
	metaphor
TEACHER SCAFFOLDING	model (playing)
	model (singing)
	accompany pupil
	play along with pupil
	Teacher tune pupil's instrument
	Hands on practical help frequency
PUPIL TALK	pupil asks a question
	agrees with teacher
	disagrees with teacher
	responds to teacher with own views
	chooses what to play
	self-assessment
PUPIL PLAYS ALONE	
PUPIL TUNES OWN INSTRUMENT	

These results were then verified using a time sampling approach. The video recordings were watched repeatedly, focusing first on the teacher behaviours and then on the pupil behaviours. The video tapes were stopped at 5 second intervals and the observed behaviour at that point was coded accordingly. Finally, qualitative field notes from the observations were used to triangulate the quantitative coded results. For the purposes of this paper, the results of the time sampling, whereby behaviours were coded at 5 second intervals, are reported. Only those behaviours that directly related to technical and musical issues are reported and discussed.

Findings

Behaviour in the observed lessons was coded in 5 overarching categories (Table 3). Pupils played in the lessons for an average of 38 per cent of time, either on their own or accompanied by their teacher. An average of 29 per cent of lesson time was spent with teachers talking, either in a directive way, diagnosing pupil performance or providing feedback. Teacher feedback was coded as 'attributional' when teachers attributed success or failure in performance outcomes to specific strategies or effort (e.g. ''well done, because when it wasn't quite sharp enough you moved your finger up, just here''). Conversely, feedback that was positive or negative but not attributed to any specific cause (e.g. "very good indeed") was coded as 'non-attributional'. Teacher scaffolding, accounting for an average of 28 per cent of time, included modelling on the violin or singing, playing along with the pupil on the violin, accompanying on the piano or providing hands-on practical help (e.g. guiding the bow, assisting with posture). Teacher questioning, taking an average of 9 per cent of time, included open questions, rhetorical questions where agreement from the pupil was required, or questions intended as a means for checking the pupil's

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understanding. Finally, pupil talk accounted for an average of 3 per cent of time and included agreement or disagreement with the teacher, contributing own ideas, self assessments and choosing what to play.

Table 3: Overall percentage of time engaged in different behaviours

Coded behaviour	Minimum	Maximum	Mean	Std. Deviation
Pupil play (tuning, playing alone and accompanied)	10.24	60.56	38.05	11.38
Teacher talk (direct, diagnose, attributional and non-attributional feedback)	13.14	48.96	29.14	7.64
Teacher scaffolding (model with playing or singing, play along, hands-on practical help, accompany pupil)	2.30	52.74	27.73	14.53
Teacher questioning (open question, seek agreement, check understanding)	3.03	17.11	8.78	3.52
Pupil talk (agree, disagree, contribute own idea, self-assess, choose what to play)	.001	8.96	3.30	2.74

Table 3 demonstrates that in all of these categories, particularly the amount of time pupils played and teachers provided scaffolding, there was considerable variability. However, an analysis of variance, comparing the mean percentage of time in each coded category across the six interpersonal types did not reveal any statistically significant differences with regards to these overarching categories of behaviour. Nevertheless, statistically significant differences were found with respect to sub-categories related to open questioning, scaffolding in the form of playing along with pupils and feedback that was specific and attributional; these are discussed in the following section.

Teacher questioning

Figure 2 suggests that the greatest proportion of time devoted to teacher questioning was found within type 6, the 'harmonious trios'. A one way between-groups analysis of variance was carried out, comparing the extent and nature of teacher questioning, across the six interpersonal types. Statistically significant differences in the percentage of time were found in respect of open questioning ($F(5, 17) = 4.8$, p = .007) and seeking agreement ($F(5,17) = 3.4$, p = .03). Post-hoc tests indicated that overall the greatest differences were in respect of open questioning, with Type 6 'harmonious trios' using more open questioning than the Type 1 'solo leaders' (mean difference 2.42), the Type 3 'dynamic duos' (mean difference 2.28) and the Type 5 'discordant trios' (mean difference 2.40).

Figure 2: Differences between interpersonal types in teacher use of questioning

Interpersonal type (cluster)
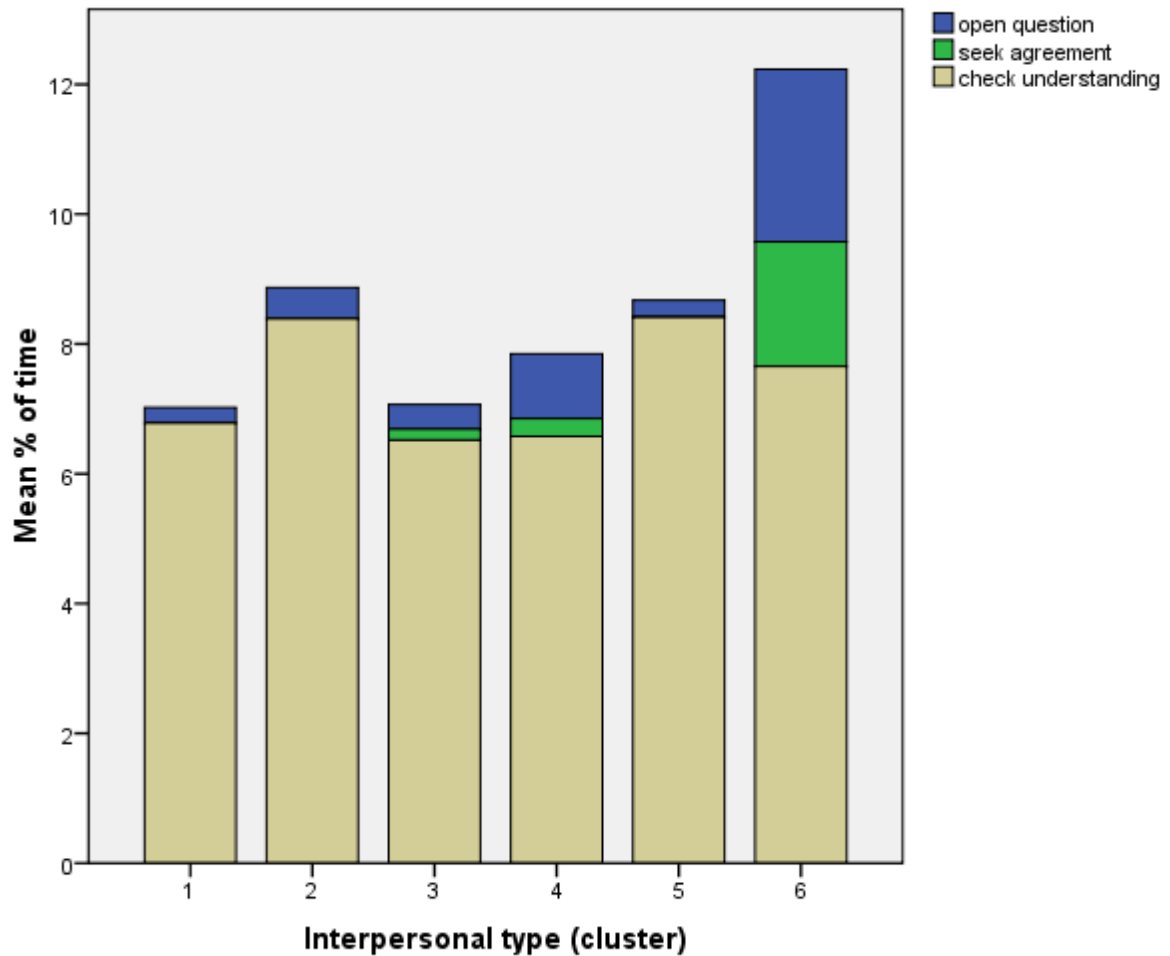
Scaffolding

A one way between-groups analysis of variance revealed that the only statistically significant difference between the interpersonal types in relation to scaffolding strategies was in respect of playing along with the pupil ($F(5,17) = 3.5$, $p = .022$). The greatest difference was found between type 1 'solo leaders' and type 6 'harmonious trios' (mean difference – 11.63). Figure 3 demonstrates that in type 1 and 5 lessons teachers played along with their pupils more than teachers in other types, while in type 6 lessons teachers spent more time providing hands-on practical help. Scaffolding in types 3 and 4 was provided for the most part through

accompanying at the piano, while in type 2 scaffolding was mainly in the form of modelling on the violin (Figure 3).

Figure 3: Time spent in scaffolding behaviour
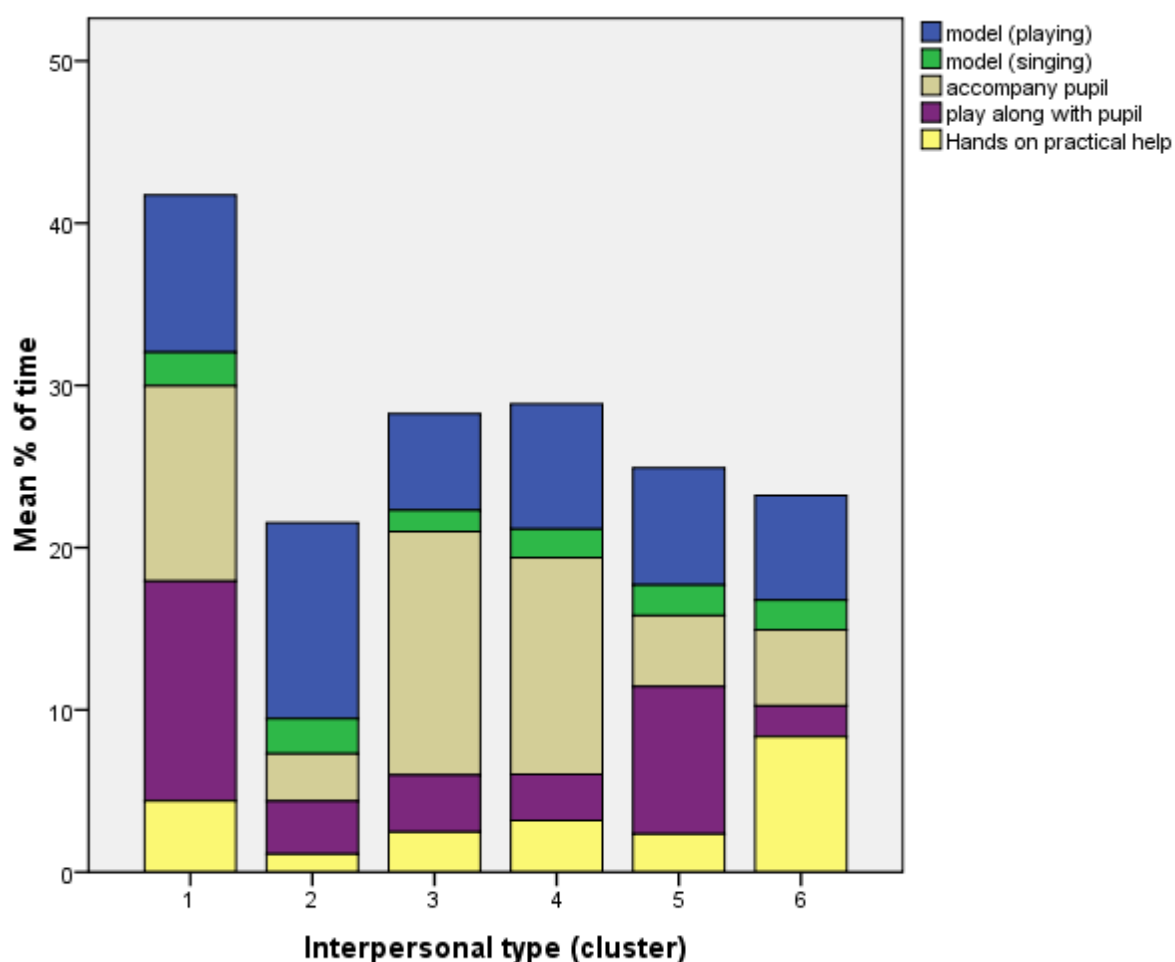
Teacher talk

The percentage of time devoted to facets of teachers talk, including directions to play, diagnoses and attributions for positive or negative performance outcomes were compared across the six types (Figure 4). Differences in respect of directions, diagnoses and non-attributional positive and negative feedback were found to be non-significant.

Figure 4: Teacher talk amongst the six interpersonal types
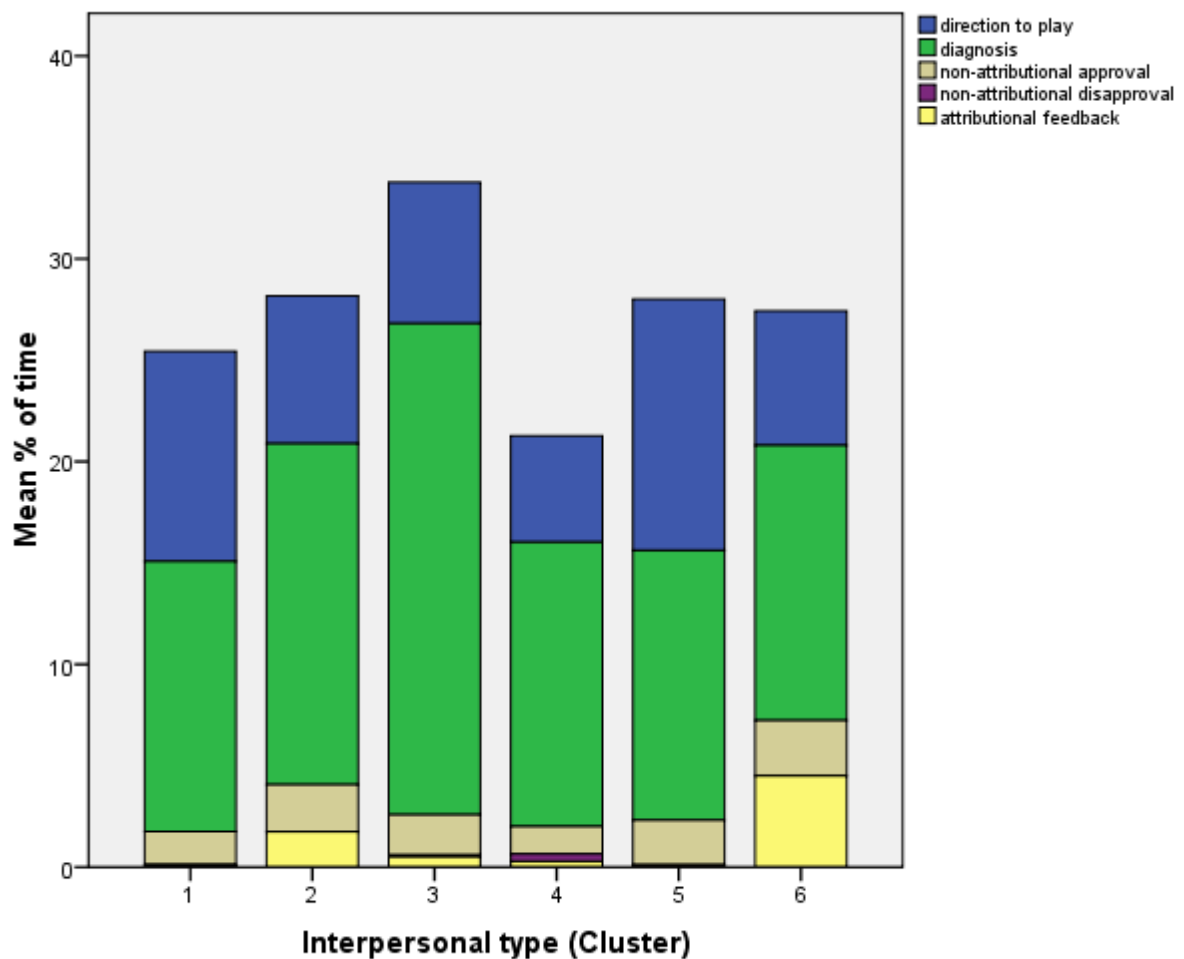
With respect to attributional feedback, statistically significant differences were found between 'harmonious trios' (type 6) and each of the other types ($F(5,17) = 13.8$, $p < .0001$) (Table 4).

Table 4: Mean percentage of lesson time devoted to attributional feedback

Type	N	Mean	Std. Deviation
1	3	.08	.03
2	3	1.78	.95
3	4	.58	.53
4	5	.3	.35
5	3	.04	.04

6	5	4.5	2.09

Pupil talk

As noted above (Table 3) a very small percentage of time was devoted to pupil talk and an analysis of variance did not reveal any statistically significant differences. Figure 5 suggests that pupils devoted more time to self assessment within type 6, while in type 4 they responded to the teacher with their own ideas, more than amongst the other types. Overall, pupils rarely expressed disagreement or agreement with the teacher and in Types 1 (solo leader) and 5 (discordant trio) pupils did not ask questions. The greatest variety of pupil talk, including more self assessment than amongst the other types, was found in type 6 (harmonious trio) lessons.

Figure 5: Percentage of time pupils talked during the lessons
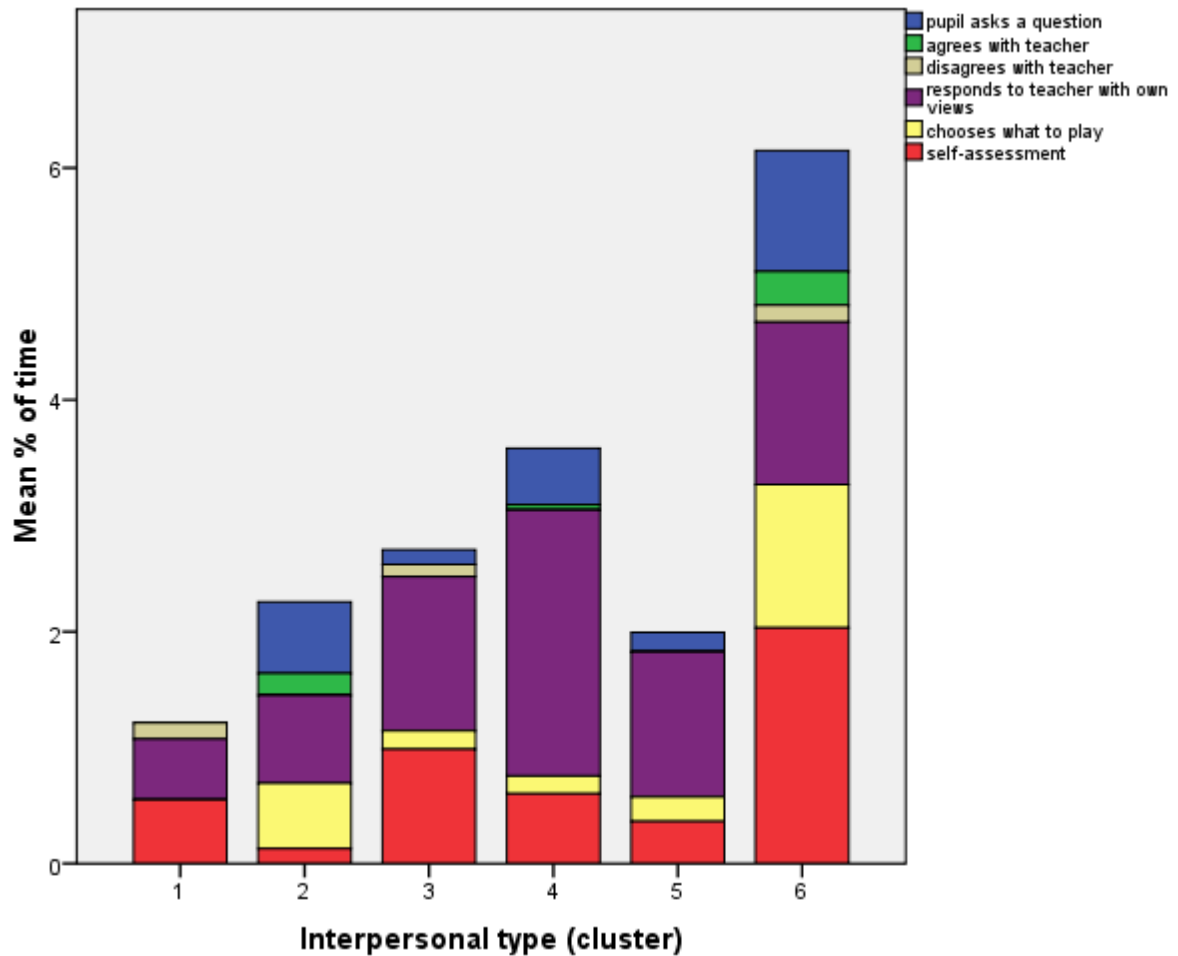
Pupil playing

A considerable amount of lesson time was spent with pupils playing their instruments (Table 5).

Table 5: Percentage of time pupils were playing during the lessons

	Minimum	Maximum	Mean	Std. Deviation
Accompanied by teacher at the piano	.00	24.23	9.06	8.25
Teacher plays along on the violin	.00	13.63	5.02	5.64
Pupil plays alone	1.44	43.01	22.85	12.05
Pupil tunes own instrument	.00	6.52	1.12	2.21
Pupil play total	**10.24**	**60.56**	**38.05**	**11.38**

As noted above, where 'accompanied by teacher at the piano' and 'teacher plays along on the violin' were coded as scaffolding strategies, statistically significant differences were found between the interpersonal types for 'teacher playing along'

(F(5,17) = 3.5, p = .022). No other significant differences were found, although
Figure 6 suggests that during the 'solo leader' lessons (Type 1) there was more
interplay between playing alone and playing with scaffolding from the teacher, in
comparison with the other types.

Figure 6: Percentage of time pupils played during their lessons
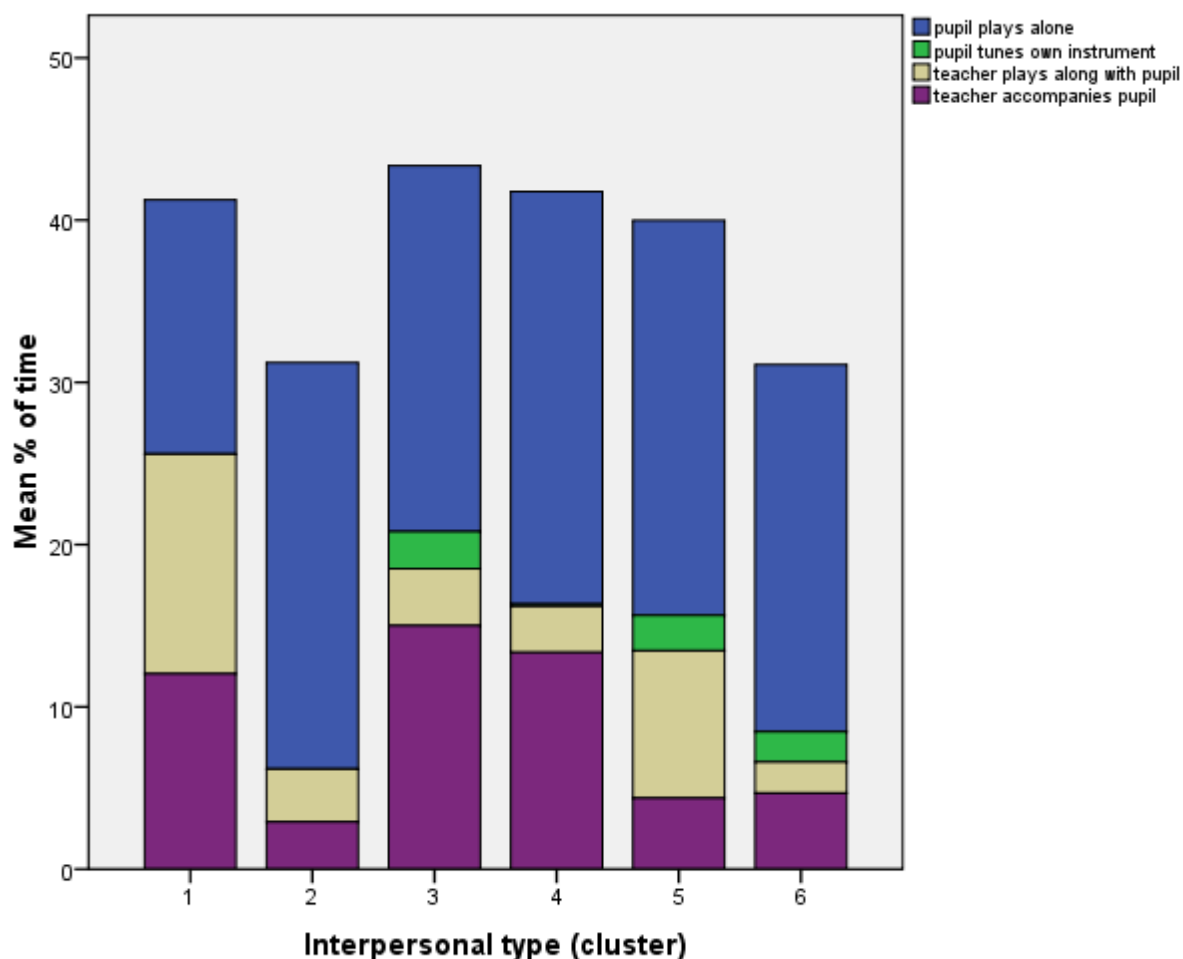
Pace of the lessons

Overall, behaviour patterns were seldom pupil-led and could most frequently be
characterized as teacher instruction-pupil response-teacher feedback. However,
there was evident variability in the extent to which teachers allowed space for pupil
response, as well as with respect to qualitative aspects of the teacher feedback.
Table 6 demonstrates an extract from a type 1 lesson, where the teacher was highly

directive, to the point that the pupil's responses were scarcely acknowledged. In contrast, the extract from a Type 2 lesson (Table 6) demonstrates a clear pattern of teacher initiation, pupil response and teacher feedback that, to greater extent, was specific. The teacher style in this lesson was authoritative, yet characterized by responsiveness to the pupil.

Table 6: Field notes from Type 1 and Type 2 lessons

Box 1: Type 1 – Solo Leader	Type 2 – Dominant Duo
02:18 Teacher check understanding (answers own question): Q: 'what do I nag you about your fingers?' Pupil - begins to speak... A: 'Your fingers are like pork sausages.' 02:39 Teacher models technical point, speaking as well. Q: 'what does my elbow do?' Pupil mumbles answer. Teacher then gives comprehensive answer and demonstration of point. 04:36 Teacher directs pupil to play. When attempt is unsuccessful, she plays along, also adding verbal directions for fingerings and bowings. 05:01 Teacher models technical point. Checks understanding with rhetorical question. 06:48 Teacher moves on from scales to pieces. Models technical point. 07:43 Teacher checks understanding, seeking answer she has in mind. Pupil supplies 'wrong' answer. Teacher interjects and provides correct, sought after answer. There is no time for pupil to explore own solution. Teacher alternates between modelling (playing), hands-on help while pupil plays, and verbal instructions, both while pupil plays and otherwise. Sometimes more than one of these behaviours at a time. 08:48 Teacher checks understanding with modelling. Q: 'What do I do that's different to you?' Then plays - pupil is required to identify the point she wishes to demonstrate. Invariably he does not get it right. 11:10 T: 'I know there are 16 million things to remember - but you have just got to', 14:29 'Pupil plays with teacher accompanying. For no apparent reason teacher stops in middle of piece: 'Good. It's coming on.' Leaves piano, teacher puts pupil's music away. 15:54 Teacher calls out instructions to pupil, as she plays along with him. 20:44 Lesson ends abruptly. 'Bell has gone'.	02:05 Lesson begins with chat - there is a nice rapport between teacher and pupil. Feedback is in pattern of non-attributional approval ('very good indeed') followed by diagnosis ('try to keep your little finger on the bow'). 03:35 Teacher helps pupil to sort out posture and bow hold. Keeps her hand on pupil's shoulder while he plays next scale. 04:19 Attributional feedback - 'good boy for correcting that note when you went slightly out of tune, you were really listening, which is lovely'. 06:11 Non-attributional approval: 'That was lovely! That has really made my day! Pupil (incredulous) 'Really??' Teacher: 'Yes, because I shall be thinking of the way you played that. It was lovely.' 06:31 Diagnosis: 'What it was, you actually slowed it down a little bit, because it's the hardest bit'. 07:41 Teacher scaffolds - plays along with pupil, counting at the same time. 10:26 Teacher suggests practising counting the introduction. Pupil tries, without the counting. Diagnosis: 'you came in a fraction too early' 12:14 Teacher asks pupil if he likes the piece. Teacher: 'Do you like this piece?' Pupil: 'Umm, NO.' 12:24 Teacher continues with diagnosis. 'There's just one bit in the middle we need to get together'. Pupil plays. 12:44 Teacher promises that if pupil just gets the one point right, she will cross this one off and move on to his favourite piece. Pupil plays. 15:49 Attributional feedback: 'I'm really pleased with you. Your bowing was beautifully controlled. Your bowing has come on so much.' 18:30 Introduces new piece - checks understanding with note names, rhythm.

	Introduces new idea - dynamics. Talks about colours, as in painting. 18:53 Sets goal, agenda for next term.

In Type 3 a clear pattern of teacher initiation, pupil response and teacher feedback was again discernible. There were longer stretches of pupil playing in this lesson and the feedback stayed focused on diagnosis of technical issues, diagnosing problems and scaffolding solutions using modelling in particular. Feedback tended to be non-attributional; where attributions were made they were to factors such as the quality of the instrument, over which the pupil had no control (Table 7). The Type 4 lesson similarly focused on technical issues, although a significant part of this lesson was devoted to playing duets together with evident pleasure, exploring musical compositional devices through this medium. Like the Type 2 lesson, there was an evident responsiveness on the part of the teacher towards the pupil's contributions, both verbal and musical.

Table 7: Field notes from Type 3 and Type 4 lessons

Type 3 – Dynamic Duo	Type 4 – Double Duo
01:28 Lesson starts with checking understanding, then moves on to scale. Attributional (external, not controllable by pupil) feedback: 'That's a much better tone, so that's fantastic, because that's a lovely violin...' 10:48 Teacher identifies technical problems in piece, devises technical exercises, demonstrating how to practise these places, pupil plays alone for long stretch. 14:42 Teacher moves from activity to next activity, always signalling change with non- attributional approval: 'Good, that's going well', 17:14 Diagnosis often followed by imitating pupil (model pupil's mistake) and then modelling how he wants it, 21:58 Focus on technical points, modelling practice strategies, 27:46 Lesson finishes - 'good, well done.'	6:44 Diagnosis: 'You got a much better sense of flow with this scale than you did with the separate bows. So, do you remember, you don't want them too slowly...', 11:19 After each episode of pupil playing teacher responds with: 'Good, OK' - then moves on to next thing. 11:38 'Well done in the concert, by the way...I had a nice little note from the music director, saying how nicely you played...' 15:07 Moves on to second piece. Checks technical point first. 17:20 'A lot of that is really good, what it needs now is....', 19:23 Teacher: 'That's going really well - the third position bit is miles better' Pupil: 'I practised it a lot' Teacher: 'I can tell you did.' 25:27 Diagnoses how to practise. Moves from one technical point to another. 27:28 Pupil chooses to play duets, teacher and pupil play together, with evident enjoyment and much musical interaction.

	29:28 Teacher stops at intermittent points in the duet to check understanding on musical points - musical devices such as imitation are identified, duets are played with a sense of performance. 36:13 Lesson finishes: T: 'Good, that's pretty good, that's getting much better, isn't it?'

Finally, field note extracts in Table 8 demonstrate a difference between Type 5, characterized by low responsiveness, and Type 6, where the teacher and pupil interact, seeking solutions to problems together. The Type 5 teacher's feedback is almost always non-attributional, yet judgmental, leaving the pupil with no specific information as to how to improve or solve a problem. The pupil is not, at any point in the lesson, provided with space in order to articulate ideas or formulate questions. In contrast the Type 6 teacher provides diagnostic feedback, attributing successful outcomes to specific strategies and providing specific information as to how to progress. Furthermore, the Type 6 teacher allows the pupil space to experiment with tuning and other technical issues, report on what has been practised that week and contribute to setting practice goals. Where the Type 5 lesson fostered evident anxiety in the pupil, the Type 6 lesson fostered enjoyment and curiosity, even where the task was difficult and challenging.

Table 8: Field notes from Type 5 and Type 6 lessons

Type 5 – Discordant Trio	Type 6 – Harmonious Trio
02:21 Teacher checks understanding - then answers own question: Q: 'Why are we up there?' (pupil silence) A: 'Too high to play in 1st position! Correct!!' 02:57 While pupil plays, teacher continually gives directions: At the end of each bow - 'move' or 'stay there' Counting aloud and eventually singing along, 03:38 After each attempt by pupil at playing double stop - teacher responds with 'as if you mean it' (non-attributional direction – there is nothing specific for the pupil to respond to). 07:16 Teacher sings loudly on top of pupil playing, 08:52 Teacher sings, makes very exaggerated clapping motions on the beat, shouts out 'make	00:59 Lesson starts with pupil tuning, teacher providing diagnostic feedback. Teacher asks what pupil has practised and what key that is in. Pupil plays scale in key of the piece which is being studied. 02:37 Pupil plays, teacher diagnoses: 'If you can bring your hand round a little bit more, so that everything's ready to reach, OK?', 04:20 Attributional feedback: 'Good, that's coming on quite well, it worked better when you shifted your hand position.' 05:30 Non attributional approval, seeking agreement: 'Yeah, that's the idea, so just, you know...just some more practice on that, do you think? Is that possible?' 06:28 Moves on from scales to vibrato exercises,

twice as much noise!', while pupil plays., 10:12 Non-attributional disapproval - use of sarcasm - 'Now can you play it really in tune?' 10:46 Teacher interjects with 'Enjoy it!' - in the middle of string of non-attributional disapproval, sarcasm, thinly disguised impatience., 17:23 The lesson ends with a sight reading exercise - teacher compares pupil with another pupil and tells her what score the other pupil got. In response to pupil's attempts at understanding the time signature (she interprets 3/8 as 3/three beats in every eight notes) teacher uses sarcasm but doesn't explain the proper meaning...'I wouldn't like to play a composition by you...', 17:23 Lesson ends with: Teacher: 'Is that enough? Unless there's anything else you want to do (while packing away the pupil's music for her)...No? OK.'), End.	provides hands-on practical help. Lots of laughter. 'On a c sharp on the A string, can you do me as wide and horrible a vibrato as you can...' 07:09 Teacher demonstrates vibrato, pupil imitates. Seeks pupil input: 'Did you hear it? Did you feel it as well?' 09:02 Moves to pieces. Diagnosis - focuses on rhythm, then also on bowing. Checks understanding of rhythm. Models, playing, clapping. Pupil joins in. 10:05 Teacher models technical point, pupil is focused on trying to work it out on her own. 11:07 Diagnosis focusing on how to practise: 'So that would be the shift...the way you practise it'. Pupil experiments. 12:35 Moves to discussion of phrasing. 'That's fine, that's terrific, it makes so much difference when you shape the phrase with your bow.' 17:27 Attributional feedback: 'Because you put more weight on the bow - That's a much more positive sound for these semis.'

Discussion

The evidence presented here provides some insight into what happens behind the closed doors of one-to-one instrumental lessons, in terms of the nature of the behaviours and interactions teachers and pupils engage in, in pursuit of positive teaching and learning outcomes. This paper suggests that behaviour in instrumental lessons may indeed differ in some systematic ways that correspond with six interpersonal interaction 'types' that were identified in the larger study (Creech, 2006).

Overall, in accordance with previous research (for example, Yarbrough & Price, 1989), behaviour patterns in the lessons were seldom pupil-led; generally pupils listened passively to teachers, responding to direct instruction and diagnosis. As previous researchers have noted (Kostka, 1984; Kennell, 1992; Benson & Fung, 2005), teachers talked (including questioning) more than they provided scaffolding for pupil activity. Furthermore, as previous research would suggest (Duke, 2002),

some Types (e.g. Type 1) were characterized by a faster pace than others, with a more dynamic interplay between different styles of scaffolding, in particular. However, in contrast to the findings from previous research, a faster pace did not always imply more positive outcomes. Rather, the fast pace established during the Type 1 lessons had the potential to obscure the pupil voice, limiting opportunities for the pupil to experiment or to formulate and articulate their own ideas. In this vein, Type 2 and Type 6 lessons, where there was less use of scaffolding strategies than in Type 1, were the lessons where the pupils were found to choose what to play and to ask questions more than in other Types.

A comparison of Type 1, characterized by highly directive teachers and reticent yet compliant pupils, with Type 6, characterized by teachers who were responsive and open to pupil views, highlights diverse behaviours that align with a difference between a didactic master-apprentice model of teaching as contrasted with a facilitative student-centred model. Hallam (1998) proposed a series of possible models developed from Pratt (1992), including engineering (delivering content); apprenticeship (modelling ways of being); developmental (cultivating the intellect); nurturing (facilitating personal agency); social reform (seeking a better society). Arguably, Type 1 may be conceptualized as aligning with the most teacher-dominated of these models, while Type 6 may be conceptualized as corresponding with the most student-centred model. In this vein, while Type 1 teachers did provide more extensive scaffolding than in Type 6, their lessons were to a large extent teacher-focussed, characterized by more directive talk than open questions or checking understanding. The pupil voice, both musically and verbally, was largely absent from these lessons. Pupils did not ask questions and did not tune their own

instruments. Furthermore, they were not given many opportunities to play alone or to explore and experiment with new ideas. In contrast, Type 6 teachers devoted more time to questioning using a range of styles. Pupils were given time to experiment with tuning their own instruments and with implementing new ideas. These pupils engaged in self-assessment and asked questions more than in other types. Perhaps the most distinctive feature of the Type 6 lessons was the specific feedback provided by teachers, attributing outcomes – be they positive or negative – to specific strategies or to effort. In this way pupils were provided with information that they could apply effectively in their progression towards becoming self-regulating, autonomous learners.

As noted in the introduction to this paper, the overarching purpose of this investigation was to contribute to our understanding of what instrumental teachers can learn to *do* in lessons in order to maximize positive learning outcomes. With the exception of Type 5, where there was little evidence of shared purpose and which was characterized by discord and anxiety, all of the observations highlighted styles of behaviour and teacher-pupil interaction that arguably have a justified place within a teacher's 'repertoire' of strategies. The complexity of teaching and learning processes, considered together with the great diversity amongst any group of individual learners, is such that effective teaching may be underpinned by just such a wide ranging repertoire of interpersonal behaviours.

From a systems theory perspective, the differences that were found with regards to style of teacher questioning, use of 'playing along' scaffolding strategies and, in particular, the use of attributional feedback could be interpreted as manifestations of

reciprocal interpersonal processes, rather than as characteristics of individual teachers. An underpinning principle of systems theory is that if one part of a system changes this will in turn effect reciprocal change throughout the whole system (Tubbs, 1984). Thus, teachers who wish to effect positive change with regards to teaching and learning processes may choose to do so by, for example, developing a flexible interpersonal style that accommodates a range of scaffolding, questioning and feedback strategies. Most importantly, teachers may use the model of interpersonal interaction as a reflective tool, supporting the development of awareness of when various scaffolding and feedback strategies may be used to greatest effect in teaching and learning contexts.

The analysis offered in this paper is limited by a small sample size that comprised unequal numbers of lessons within each interpersonal type. Furthermore, the participants in the study were to a large extent self-selecting, which may have biased the results. It is also important to acknowledge that the very presence of the researcher observing the lesson may have changed the interpersonal dynamic and influenced particular behaviours. Furthermore, the interpretation of the observed lessons is one researcher's perspective – a researcher who herself is an experienced instrumental teacher and teacher educator. While every attempt was made to create a robust analysis, a potential bias in interpretation must be acknowledged. A further salient consideration that was outside of the scope of this study is related to gender issues. There is a real need for future research that examines potential gender biases in instrumental teaching.

Notwithstanding these limitations, the observations reported here, within the framework of the model of interaction types, provides teachers with a tool for reflecting on and widening the scope of their own teacher-pupil behaviour and interactions. Teachers and pupils need not become entrenched in fixed patterns of interaction behaviour that potentially place constraints on teaching and learning outcomes. Rather, instrumental teachers have the option to widen the scope of their behavioural repertoire, thereby creating opportunities for enhancing both pupil engagement with learning and teacher satisfaction. For example, teachers may re-frame or vary their style of feedback, they may encourage student questioning and self assessment and they may create space for experimentation with technical solutions and exploration of musical ideas. Altering patterns of lesson behaviour in these ways offers the potential for students and teachers to migrate to alternative interaction styles that may foster greatly enhanced learning outcomes.

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