

**A Content-focused, Social Constructivist Model of Professional Development:
Exploring its Effect on Adults' Knowledge of Social Communication Development,
their Style of Interaction and on Pupil Outcomes in Autism Specific Classrooms.**

Volume Two of Two

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BEd
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A thesis submitted in fulfilment of the requirements for the degree of
Doctor of Philosophy

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August 2018

Declaration

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of Doctor of Philosophy is entirely my own work, and that I have exercised reasonable care to ensure that the work is original and does not to the best of my knowledge breach any law of copyright and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

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Abbreviations, Acronyms and Working Definitions

(a) From this study:

Academic Activities (AA)	Activities that involved teaching
Behaviour Directives	Seek to control/direct the pupils' behaviour
ClonadooS	Clonadoo SNA
ClonadooT	Clonadoo Teacher
Communication Cues	Expect the pupils to respond
Co-operative Activities (CA)	Activities that required input from an adult
Directive Communication	Seeks to control/direct the pupil's verbal and nonverbal behaviour
Eliciting Communication	Seeks to cajole/tempt the pupils to communicate
Facilitative Communication	Seeks to maintain the pupils' attention/interest in the interaction
LL	Learning Logs
MKO	More Knowledgeable Other
OE	Overall Evaluation
PD	Professional Development
PCK	Pedagogical Content Knowledge
Post-PDI	Professional Development Interview
Post-PD (<i>data</i>)	Data influenced by participants' engagement with professional development associated with this study.
Pre-PDI	Professional Development Interview
Pre-PD (<i>data</i>)	Data related to time before participants engaged with professional development associated with this study.
Pre-PDI	Pre-Professional Development Interview
RD	Reflective Diaries
Solitary Activities (SA)	Activities the pupil could do independently

(b) Related to autism and autism education

ABA	Applied Behaviour Analysis
AS	Autism Spectrum
ASD	Autism Spectrum Disorder
Hanen	An intervention to support children with severe language delay
MTW	More Than Words

PECs	Picture Exchange Communication System
PEP-3	Psychoeducational Profile Third Edition
Social Stories	Describe a situation and/or other's perspective, and suggest an appropriate response
TEACCH	Treatment and Education of Autistic and related Communication Handicapped Children

(c) Professional qualifications referenced`

B Ed	Bachelor's Degree in education
GCEAS	Graduate Certificate in the Education of Pupils on the Autism Spectrum
GDSen	Graduate Diploma in Special Educational Needs
M SC	Master's Degree in science
PGC ASD	Post Graduate Certificate in Autistic Spectrum Disorders
PGD Ed	Post Graduate Diploma in Education
PGDSen	Post Graduate Diploma in Special Educational Needs

(d) General

CFG	Critical Friends Group
Crisis Prevention	Strategies to promote a safe environment
DefS	Department for Education and Skills (GB)
DES	Department of Education and Skills (Ireland)
FETAC	Further Education and Training Awards Council
IDEA	Individuals with Disabilities Education Act
MCDI	MacArthur Communicative Developmental Inventory
NCLB	No Child Left Behind Act
NCSE	National Council for Special Education
NRC	National Research Council
PLC	Professional Learning Community
Primary	First level of formal education in Ireland, traditionally 4yrs to 12 yrs
RoI	Republic of Ireland
Secondary	Second level school for pupils aged 12-18 yrs
SEN	Special Educational Needs
SESS	Special Education Support Service
SNA	Special Needs Assistant

Acknowledgements

I would like to express my gratitude to the following people for the part they played in supporting the completion of this study.

All of the pupils on the autism spectrum whom I have taught during my teaching career - my struggle to effectively support their learning set me on this journey of discovery.

The parents of the five young pupils on the AS for their trust in allowing their son or daughter's participation in the study.

The participant pupils themselves.

The teachers and SNAs from the five autism-specific classrooms who participated enthusiastically in the activities throughout the duration of the professional development initiative. In particular, for their willingness to share their practice that provided the rich and insightful data. I thank them for their dedication and enthusiasm.

Dr Anne McGough who agreed to be my supervisor and who continued to support, push my thinking and provide insightful comments to the completion of the thesis, long after her own retirement. I am eternally grateful.

Dr Anita Prunty and Dr Órla Ní Bhroin who carried the mantle following Dr McGough's retirement. Many thanks for their encouragement and advice.

Ben Meehan who supported my learning curve in using NVivo with patience and understanding.

My colleagues in the former Special Education Department St. Patrick's College and my current colleagues in the School of Inclusive and Special Education Department for their tireless support and willingness to listen whenever I wanted to talk about the study.

My bridge, golf, and tennis partners who kept me sane for the duration of the study.

My late parents Paddy and Breda Piggott who made many sacrifices to support their ten children achieve their potential and who would have been so proud. I thank them for their love and high expectations.

My nine siblings who supported me when the going got tough.

Doireann and Clíodhna, my two wonderful daughters-this work would not have been possible without their love and support.

Seán, my "go to guy" to tease out my thinking, to proofread and to format the final version.

I would like to acknowledge the financial support received from the Teaching Council at the outset of the study.

**A Content-focused, Social Constructivist Model of Professional Development:
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Abstract

The number of children diagnosed on the autism spectrum (AS) both nationally and internationally has increased dramatically. Development of social-communication abilities is a major difficulty faced by these children. Challenges include attending to others, initiating and responding to social interactions and using and responding to verbal and non-verbal communication. Research has shown the positive impact of supporting parents to adopt facilitative interaction strategies on the social-communication abilities of their children on the AS. However, there is a paucity of research exploring the impact of enhancing teachers and school support staff's knowledge and use of such strategies. In response to this, a model of professional development was developed by the researcher for this study. The model was informed by the researcher's social constructivist view of teaching and learning.

This study explored the impact of a nine-month professional development initiative on the social-communication behaviours of a teacher, a Special Needs Assistant (SNA) and a young pupil on the AS in five different autism-specific classrooms. The research questions were:

1. Did professional development (PD) in communication-promoting strategies have a discernible impact on how the classroom adults interacted with their young pupils?
2. What were the effects on the social-communication skills of young infrequent communicators on the AS when classroom staff participated in the PD initiative?
3. What were the adults' perceptions of their participation in the social-communication professional development initiative?
4. How did the presence of an external "More Knowledgeable Other" (MKO) impact on the adult participants' learning within this model of PD?

Using a multiple case study approach, data were collected across five cases using pre and post semi-structured interviews, formal assessment, observations, reflective diaries, discussion fora, learning logs, and questionnaires. Qualitative and quantitative analysis techniques were used to explore the data.

The adults changed their interactive style, decreasing their use of “directive” communication considerably and adopting a mainly facilitative approach. The duration of positive shared engagement between the adults and their pupil on the AS increased significantly. The pupils’ rate of communication increased, particularly their initiations. The outcomes for the pupils’ language use were mixed. The outcomes were influenced by the context of the interactions and the pupils’ learning characteristics. The adults reported significant benefits arising from their participation in the PD for themselves, other pupils in their class and the school community. The More Knowledgeable Other (MKO) played a pivotal role in supporting adult learning within the initiative.

The findings from the study suggest that effective professional development for school staff working with pupils on the AS include pedagogical content knowledge (PCK) contextualised to the participants’ needs, opportunities for implementation of the PCK, a MKO to support deeper participant learning and, learning activities that promote reflection.

Appendix 1: DES Funded Courses Available to Teachers with Pupils on the AS

	Course	Duration	Places available
1	Individualised Planning for Students with Autism, Primary	1 day	Open to special schools, autism specific classes and SEN teachers
2	(Sign Communication System), Primary & Post Primary	1 day	Open to all teachers who are Lámh users
3	Contemporary Applied Behaviour Analysis (C-ABA)	5 days	Open to special schools, autism specific classes and SEN teachers
4	An Introduction to Autism, Primary	1 day	Principals and teachers working with students on AS
5	Social Stories™, Primary & Post Primary	1 day	Primary, 2 nd level, Special School and SEN teachers
6	ABLLS-R & VB-MAPP	1 day	Open to special schools, autism specific classes and SEN teachers
7	2-Day TEACCH, Primary & Post Primary	2 days	Open to special schools, autism specific classes and SEN teachers
8	An Introduction to DIR® Floortime, Primary	1 day	Open to special schools, autism specific classes and SEN teachers
9	Autism, Mental Health & Managing Anxiety, Primary & Post Primary	2 days	Primary, 2 nd level, Special School and SEN teachers
10	Language & Communication for Students with Autism in the Mainstream Classroom, Primary & Post Primary	2 days	Primary, 2 nd level, Special School and SEN teachers
11	Autism: A Sensory Perspective, Primary & Post Primary	1 day	Primary, 2 nd level, Special School and SEN teachers
12	Pathways to Prevention	3 days	All teachers working with students with SEN including ASD
13	Social Skills for Students with Autism, Post Primary.	1 day	All teachers working with 2 nd level pupils on the AS
14	T-TAP (TEACCH Transition Assessment Profile), Post Primary	2 days	Special class, special schools and SEN Teachers teaching 2 nd level pupils on the AS
15	Using AFLS: The Assessment of Functional and Living Skills, Primary & Post-Primary	1 day	Primary, 2 nd level, Special School and SEN teachers
16	Literacy, Numeracy & Autism,	1 day	Special class, special schools and SEN Teachers teaching 2 nd level

	Post Primary		pupils on the AS
17	Literacy, Numeracy & Autism, Primary	1 day	Special class, special schools and SEN Teachers teaching primary aged pupils on the AS
18	TEACCH® Autism Programme, Primary & Post Primary	5 days	Special class, special schools and SEN Teachers teaching primary & 2 nd level pupils on the AS
19	Accessing the Curriculum for Students with Autism, Post Primary	1 day	All teachers working with 2 nd level pupils on the AS
20	Supporting Students with Autism as they Transition through Education, Primary	1 day	Open to special schools, autism specific classes and SEN teachers primary level
21	Autism & Co-Occurring Additional Needs, Primary & Post Primary	1 day	Special class, special schools and SEN Teachers teaching primary & 2 nd level pupils on the AS
22	Early Communication for Students with Autism (Pre or Early Verbal), Primary & Post Primary	2 days	Special class, special schools and SEN Teachers teaching primary 2 nd level pupils on the AS
23	Puberty, Relationships, Sexuality & Autism, Primary & Post Primary	1 day	Special class, special schools and SEN Teachers teaching primary 2 nd level pupils on the AS
24	Teaching Young Children with Autism, aged 3-5 years, Primary	1 day	Special class, special schools and SEN Teachers teaching this age group of pupils on the AS
25	Intensive Interaction	1 day	Open to special schools, autism specific classes and SEN teachers
26	Pilot: Language & Communication for Students with Autism in the Mainstream Class, Primary and Post Primary	4 days	Mainstream teaching primary & 2 nd level pupils on the AS
27	PEP-3 - Assessment	1 day	Open to special schools, autism specific classes and SEN teachers

Appendix 2: Advertisement Seeking Participants

**Do you teach a child with ASD
between 3-6 years?**

**Would you like to enhance
his/her social communication
skills? Would you be prepared to
participate in a research project?**

**If so, contact
tish.balfe@spd.dcu.ie**

InTouch January/February 2011

Appendix 3: Plain Language Statement for Teachers and SNA

Plain Language Statement for Teachers and SNA

Students diagnosed with autism have distinct difficulties in social understanding and communication which are not consistent with their developmental age. These difficulties may be evidenced by difficulties in the earliest communicative behaviours such as joint attention, eye contact and turn taking, initiations, pointing, showing, giving, requesting and commenting. An aim of the research is to develop teachers' and SNAs' knowledge of how to support the development of communication skills in young children on the Autism Spectrum. To develop this knowledge, I wish to bring the teachers and the SNAs together throughout the next academic year for professional development (PD). At each meeting, information on communication and language pedagogy will be shared. Between meetings, you are asked to implement the PD content with the pupils in your class and in particular the focus child. You are asked to take video of the sessions with the focus child. These recording will be shared and discussed with the group at subsequent PD meetings.

Your participation in the research will be entirely voluntary, and you are free to refuse to answer any questions I may ask. You may withdraw from the project at any time. Should you consent to participating in the research I will conduct a semi structured interview at the beginning and end of the study. You will be invited to attend a PD meeting on a Saturday, September 2011 bringing with you a 10-minute video clip of you interacting with the focus student. This Saturday will be followed by five other Saturday meetings between October and May 2012. The five PD meetings may include content delivery, workshops and reflection on video clips. You will be asked to record 3 X10 minute video clips of trialing the new ideas between each meeting and keep e-diaries of the communication sessions. I will be available for discussion throughout the study by phone or email. All data will be closely examined to identify the impact of the PD on teaching and learning of the social communication content.

I hope this research will contribute to the teaching and learning of social communication within the classes for children with ASD and also contribute to enhancing the quality of PD provided to teachers through the Post Graduate Certificate course in Autistic Spectrum Disorders offered in [REDACTED] College [REDACTED]

In particular I hope the research will

1. Enhance the social communication skills of the focus student through developing your knowledge and understanding of early communication theories and pedagogy relevant to students on the AS.

Guide you to

- 1) Become reflective practitioners.
- 2) Enhance your knowledge and understanding of early communication theories and pedagogy relevant to students with ASD.
- 3) Enhance the communication and language development of students on the AS in the Irish classrooms, who are reluctant communicator

Electronic and written information will be kept strictly confidential subject to the limitations of the law, and will be available only to me, my supervisors and an independent coder. Excerpts from the data collected during the study will be part of the final thesis, journal articles, presentations and teaching but all efforts will be made to ensure no identifiable information will included in these. In the case of the video footage anonymity cannot be ensured, as the teacher and student may need to use names in order to interact, however use of the footage will be confined to the purpose for which consent has been obtained i.e. training teachers and professionals. Data collected for the research will not be used for any other purpose without seeking additional permission from you. A written summary of the findings will be sent to the school and a DVD of all the clips and a written summary will be sent to the parent of the participant child. Raw and processed data will be destroyed five years after the completion of the research.

Appendix 4: Teacher and SNA Consent form

Teacher and SNA Consent form

I am doing research on exploring the impact of deepening teachers' and SNAs' knowledge of developing social communication skills in children with ASD. It is hoped this will be achieved through a professional development initiative. The core belief of any professional development is to improve practice. It is hoped that this will be achieved through accessing new knowledge, discussion, sharing of ideas and reflection within the group. Participation in the study will involve participating in interviews at the beginning and end of the study and attending PD meetings at least six Saturdays between September and May. Between the meetings you are asked to implement the communication and language content daily during a 10-minute session with your student. You are asked to video your implementation of the PD content with the focus child at least once a week. You are also asked to keep weekly reflection diaries of your communication and language sessions. At the PD meetings recordings of your communication and language sessions will be discussed, shared and reflected on. If you agree, I will record the interviews and discussions at each meeting to ensure I'm reporting what you say correctly. I will also carefully examine the video recordings and diaries for the research.

I hope my research will aid in the development of social communication in your classes and inform practice in classes for children on the AS in the future. Every effort will be made to ensure that your identity will be protected. Real names will not be used in the study or in any publications or presentations arising from it. You are under no obligation to participate and you are free to refuse to answer any questions and to withdraw from the research at any stage. If you are happy to take part in this research, please complete the consent form below.

Permission

I understand the information provided **Yes/No**

I agree to the recording of what I say in interviews and discussions **Yes/No**

I agree to video the implementation of the PD content for later analysis by the researcher **Yes/No**

I agree to writing a reflective diary each week for later analysis by the researcher **Yes/No**

I give permission for the video recordings to be viewed and discussed at the PD sessions that will include four teachers, four SNAs and the researcher **Yes/No**

I give permission to Tish Balfe, Special Education Department, St Patrick's College, Drumcondra, Dublin 9 to use excerpts from the data collected during the study for the final thesis, journal article, presentations and teaching for ten years following the completion of the study. **Yes/No**

I understand I can withdraw my consent at any time **Yes/No**

I agree to take part in this study **Yes/No**

Signed: _____

Date: _____

Appendix 5: Letter to Board of Management

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Dear Chairperson,

My name is Tish Balfe, I am doing a research project entitled “Improving communication skills in young children with ASD: Enhancing teachers’ and SNAs’ knowledge of and pedagogy for early social-communication skills, through a Professional Development (PD) initiative. I am interested in exploring the impact of deepening the teachers’ and SNAs’ knowledge of communication and language theory and strategies through a professional community of learners (PLC). The project is to be submitted to St. Patrick’s College, Drumcondra, Dublin 9, for the award of the degree of Ph.D. I am the sole researcher for the study and it is being undertaken in my own time.

I have discussed the aim and purpose of my research with the principal and staff of the school and they have agreed to participate. Should you give permission for the research, I will obtain permission of the parents in the class for children with autistic spectrum disorders where the research will be carried out. The research project will continue throughout the academic year beginning in September 2011. Part of project involves the teacher and the SNA interacting 1:1 with the focus student for ten minutes on a daily basis. The adults are asked to record at least one session each week. The video clips will be subsequently discussed amongst the participants and for will be analysis as part of the study. The teacher and SNA will also be required to attend professional development days approximately six times during the academic year beginning September 2011. PD meetings will occur on Saturdays. They will also be asked to participate in a semi structured interview before and after the study. The teachers and SNA are also asked to keep weekly reflective diaries on their daily interaction sessions with the focus student.

Video-tapes will be stored securely by me for the duration of the study. Electronic and written information will be kept strictly confidential, subject to the limitations of the law, and will be only available to the researcher, her supervisors and an independent coder who will be certifying the objectivity of the analysis. Excerpts from the data collected during the study will be part of the final thesis, journal articles, and presentations but no identifiable information will be included in these. In the case of the video footage anonymity cannot be ensured, as the teacher and student may need to use names in order to interact, however use of the footage will be confined to the purpose for which consent has been obtained i.e. training teachers and professionals. Data collected for the research will not be used for any other purpose without seeking additional permission from you. A written summary of the findings will be sent to the school. Raw and processed data will be destroyed five years after the completion of the research.

I would like to take the opportunity to thank you for the privilege of conducting this research in your school. I hope that this research will contribute to the teaching and learning of social communication skills for children with autistic disorders in the school

while also contributing to the development of in-service training for teachers of children with autistic spectrum disorders in the future.

Should you wish to discuss any aspect of the study or arise any questions related to it, you may contact me at any time. My home phone is [REDACTED] and mobile phone is [REDACTED]. My e-mail address is tish.balfe@spd.dcu.ie

Your co-operation in this research would be greatly appreciated

Yours Sincerely,

Tish Balfe, Researcher

Confirmation of Permission:

We have read the letter and understand the rationale and nature of the research. We give permission to carry out her research in [REDACTED]

Signed: _____

Date: _____

Appendix 6: Letter to Parents

Dear [REDACTED],

My name is Tish Balfe. I am carrying out a research project entitled “Improving communication skills in young children with ASD: Enhancing teachers’ and SNAs’ knowledge of and pedagogy for early social-communication skills, through a professional development (PD) initiative”. I am interested in exploring the impact of deepening the teachers’ and SNAs’ knowledge of communication and language theory and strategies through a year-long PD initiative. The research is to be submitted to St. Patrick’s College, Drumcondra, Dublin 9, for the award of the degree of Ph.D. I am the sole researcher for the project and it is being undertaken in my own time.

[REDACTED]’s school has agreed to be involved in the research. The research project will continue throughout the academic year, beginning in September 2011. Part of project involves [REDACTED]’s teacher and SNA interacting with [REDACTED] during a daily 10-minute session. With your permission, [REDACTED] will be videotaped during one of these sessions each week for the duration of the project. These clips will be discussed at subsequent PD meetings as a means of supporting the classroom adult’s learning. These interaction clips will also be analysed as part of my research. I will also be assessing [REDACTED]’s social communication skills at the beginning and end of the project. This assessment will be video recorded for verification purposes. I am also seeking your permission to read any psychological report writing about [REDACTED] to have a clear understanding of his/her diagnosis.

Video-clips will be stored securely by me for the duration of the study and will be available to the researcher, and an independent coder who will be certifying the objectivity of the analysis. The clips will be also be used for training the participants (teachers & SNAs) during the study and for analysis as part of the study. The clips will also be used to support social communication PD teachers for five years after the completion of the research. Excerpts from the data collected during the study will be part of the final thesis, journal articles, and presentations but no identifiable information will be included in these. In the case of the video footage anonymity cannot be ensured, as the teacher and student may need to use names in order to interact. Further, teachers viewing the clips may recognise the adults. However, use of the footage will be

confined to the purpose for which consent has been obtained i.e. supporting school staff working with children on the AS. Data collected for the research will not be used for any other purpose without seeking additional permission from you. Raw and processed data will be destroyed five years after the completion of the research.

Your co-operation in this research would be greatly appreciated. I am available to meet you at [REDACTED]'s school at any time and date that is convenient for you to discuss this project in more detail and to answer any questions you may have. My e-mail address is tish.balfe@spd.dcu.ie, if you wish to contact me to make an arrangement. Alternatively, we could discuss the project over the phone. My home phone is

[REDACTED] and mobile phone is [REDACTED]

If you allow your child to be a participant in the study, please return the signed consent form in stamped addressed envelope supplied.

Yours sincerely,

Tish Balfe, Researcher

Appendix 7: Informed Consent Form

I/We the parent(s) have read the attached letter outlining the research project entitled “Improving communication skills in young children with ASD: Enhancing teachers’ and SNAs’ knowledge of and pedagogy for early social-communication skills, through a professional development (PD) initiative”. I/We also have read and understand that the teaching/interaction sessions will be video recorded and how the recording will be used. I/We give the following permission on [REDACTED]’s behalf.

Permission:

I/We give permission for [REDACTED]’s teacher to allow Tish Balfe to read [REDACTED]’s psychological report.

I /We give permission for the social communication assessment of [REDACTED]	Yes/No
---	---------------

I/We give permission for a video recording of the teaching and interaction sessions to be taken.	Yes/No
--	---------------

I/We give permission for the video recordings to be viewed and discussed at the PD meetings that will include for teachers, four SNAs and the researcher	Yes/No
--	---------------

I/We give permission to Tish Balfe, Special Education Department, St Patrick’s College, Drumcondra, Dublin 9 to use excerpts from the data collected during the study for the final thesis, journal articles and presentations, and teaching for five years following the completion of the study.	Yes/No
--	---------------

We understand we can withdraw our consent at any time.

Name: _____

Signed: _____

Date: _____

Appendix 8: School Context

Teacher	School	No. of Teachers in school	No. of autism classes	No. of students in autism class	Age range	Gender
Ella	Shanbailey	24*	3	4	5 -7yrs	All boys
Síofra	Clonadoo	38	2	6	4-7yrs	4 boys & 2 girls
Yana	Windyvale	4	1	5	5-8yrs	3 boys; & 2 girls
Violet	Bridgeport	15	2	6	5-7yrs	4 boys & 2 girls
Maddie	Grindstone	4	1	6	4-12yrs	5 boys 1 girl

***inclusive of teachers in autism classes**

Appendix 9: Demographics of SNAs and the Training Received

Demographic Information on SNAs

SNA	Name of School	Age Bracket	Experience with student	Working with students on AS	Experience as SNA.
Nuala	Shanbailey	40-42	0	1yr.	12yrs.
Sunita	Clonadoo	45-50	1yr.	1½yrs.	2½ yrs.
Kim	Windyvale	45-50	1½yrs.	2yrs.	7yrs.
Heidi	Bridgeport	40-45	1yr.	2yrs.	3yrs.
Donna	Grindstone	50-55	2yrs.	7yrs.	7yrs.

Training SNAs have received

Qualifications & Training				
SNA	School	Highest Level of Qualification	Training in ASD prior to PD	ASD Training while attending PD
Nuala	Shanbailey	Undergraduate Diploma Special Educational Needs & FETAC Level 5	In-class guidance	No
Sunita	Clonadoo	FETAC Level 5	In-class guidance	No
Kim	Windyvale	FETAC Level 6 Completing Degree	Watched what teacher did	No
Heidi	Bridgeport	FETAC Level 5	In-class guidance	No
Donna	Grindstone	FETAC Level 5	Watched what teacher did	No

Appendix 10: Interview Schedules Pre- and Post-Professional Development

Teachers' Pre-PD Interview Questions

- Demographic Information (age bracket, qualifications, years of experience in teaching/ class for ASD/ how long are you teaching XXXXX/ school information)?
- In what way is your experience of teaching children on the AS different to your experience teaching children who do not have autism (**added after the pilot**)?
- Talk to me about your teaching day- do you approach it differently to when you were teaching a mainstream class? (**added after the pilot**)
- Talk to me about the specific training you have had for teaching children on the AS
- Class information (Talk to me about your class, how many students, ages, level of verbal ability, communication ability, ways of working).
- Talk to me about the target student (when was he diagnosed, what is his specific diagnosis /when did he join the school? Did he go to an autism specific playschool? Does he have support outside school/the nature of that support (**after the pilot**)? Did he have those supports last year? How would you describe him? What are his strengths what are his needs? What makes him happy? What challenges him most? (**added after pilot**)
- Talk to me about XXXX's communication and language
 - How does he communicate?
 - Does he initiate an interaction with others? (always, sometimes, rarely, and for what) when, with whom, why and for what?
 - Does he respond when called, (always, sometimes, rarely, never) To whom and why?
 - What spontaneous words have you heard ...use directed at another adult or peer
 - Does he ever seek anyone out – and if so whom and for what?
 - When does he use his language (**added after the pilot**)
- What aspects of the children with ASD education do you consider you are addressing really well/ what aspects are really challenging (**added after pilot**).
- How would you rate your ability to teach social communication to the children in your class on a scale 1-5? (**added after pilot**)
- Talk to me about how you address the student's social communication difficulties at the moment? How do you teach social communication - (How often, when, what works/ what are the challenges?)
- Can you recall any ah –ha moments with the student (**Added after the pilot**)
- What do you hope to achieve from being a participant in the research?
- What do you hope to achieve for the student?
- What are the activities that the student really enjoys (what DVDs food, games, toys, activities, TV /film characters....)
- What really motivates him/her (**added after the pilot**)
- What skills do you think they should have in order to become proficient communicators?
- How do you seek to overcome the challenges?

SNAs Pre-PD Interview Questions

- Demographic Information (age, qualifications, years of experience in mainstream/class for ASD/ How long have you been working the target child?)
- Class information (Talk to me about the class, students, ways of working)
- Talk to me about the target student, what are his strengths and what are the challenges for him? What really makes him happy? What upsets him? **(added after pilot)**
- Talk to me about working with **(added after pilot)**
- When do you hear him use his language **(added after the pilot)**
- What do you hope to achieve from being a participant in the research?
- What is the most challenging aspect of the job for you when interacting with the student? **(added after pilot)**
- What do you hope to achieve for the student?
- What are the activities that the student really enjoys
- Knowledge of Social Communication Pedagogy (Talk to me about interacting with the students / what works/ what are the challenges?)
- How do you overcome the challenges?

Post-PD Interview Schedule for Teachers & SNAs

- What do you think of the actual process?
- At the first meeting of the PD I outlined the objective of the collaborative PD was to bring together a group of individuals from similar contexts to collaborate continuously and to share knowledge in order to improve individual and collective learning.
- Did *you* collaborate?
- Did *you* share the knowledge you gained at the PD?
- Did your learning improve /if so in what way?
- Do you think the groups' learning improved...in what way?

Views on their experience of the elements of the PD

- Face to face sessions (pros and cons)
 - Video taking / discussing the clips at the meetings (pros and cons)
 - Weekly Diaries (pros and cons)
1. What do you think *you* achieved by engaging in the PD?
 2. Talk to me about the ways the PD influenced your practice
 3. Talk to me about the C&L of the students with ASD
 4. Did it benefit the staff as whole?
 5. Aside from the 10-minute daily interaction are you teaching Communication & language in any other way?
 6. What do you think are the elements of the most successful interaction sessions you have had with the student?
 7. Do you think what you hoped to achieve for the student by your participation in the PD has been achieved and if so in what way?
 8. Ways the PD could be enhanced?

Appendix 11: Handout for 1st PD Meeting

1st Collaborative Professional Development (PD) Meeting



House Keeping

9.30-10.00 Welcome, Tea, coffee and scones.

Fill in travel expenses

10.00- 10.30. The Professional Development Context

10.30- 12.30 Communication and Language (Typical Development & ASD)

12.30-1.00 Lunch

1.00- 2.30 Facilitating Social Engagement

2.30 Learning Logs

Reflective Diaries

What is the Objective of this PD

- *To collaborate together and to continuously seek and share knowledge in order to improve individual and collective learning (adapted from Hord, 1997).*

Overall Objective of this PD

To enhance the social communication skills of the children in our classes.

What is this Collaborative PD about?

What are you asked to do?

- meet once a month to talk and reflect on the development of early social communication skills in your classes for children on the AS,
- trial new ideas introduced at each meeting in the classroom/school.
- collaborate, by sharing and discussing the topics/ideas through the PD online meeting room.
- Share and discuss challenges, successes & dilemmas at each PD meeting.

What is in it for you?

- the opportunity to enhance your own expertise by accessing theoretical knowledge and pedagogy in a small group,
- the opportunity to think about and discuss the implementation of new Social Communication strategies with others from similar contexts.
- To provide and receive constructive and thoughtful feedback on your implementation of the ideas and skills based on enhancing the social communication skills of children on the AS.

PD Moodle Page

- www.spdonline.ie
- Click on "Centres & Programmes" (on right of page)
- Click on "Social Communication Study"
- Put in User name and Password

Overall Objective of this Project

- To enhance social communication in our classes for children with ASD
- To enhance our pedagogical skills for addressing the social communication needs of the children
- To develop our ability to successfully support the social communication abilities of children with ASD through developing an awareness of what communication is and what are the prelinguistic skills required to become a proficient communicator
- To reflect on and develop our own skills when interacting with children with ASD

Language & Communication

- **Language is a system** of Communication

• **Words** = **Signifier** + **Sound** + **Meaning** + **Form**
Meaning = **Referent** + **Symbol** + **Context** + **Form**
Context = **Referent** + **Symbol** + **Form** + **Context**
Form = **Referent** + **Symbol** + **Context** + **Form**
Context = **Referent** + **Symbol** + **Form** + **Context**
Form = **Referent** + **Symbol** + **Context** + **Form**
Context = **Referent** + **Symbol** + **Form** + **Context**



Language is a tool that children learn to use to interact with their environment and to maintain better social contact. (Owen's 1996)

Communication Involves

- Motivation to engage in communication
- The situation in which the communication takes place
- Type of message conveyed (request for information/comment/ an instruction/ an answer/ a request for an object)
- Ability to take turns as both speaker and listener
- Ability to comprehend and use nonverbal messages
- Ability to comprehend and use verbal messages
- Ability to modify messages produced as a result of feedback from the listener and of feedback provided by one's own body (auditory feedback of ones own speech)

Transactional approach to Language Learning

The child's communicative behaviour influences the adult in terms of type of response, as well as frequency and complexity of the support provided.....

The adult needs to be proficient in recognising when support is needed, what level is required and when to step back



When and How does it happen?

Communication before Language (0-6 mths)

- **Pre/Non-Intentional** -has no intended outcome, not directed towards a partner
- **Has a Communicative effect** because the adult assigns meaning

Pseudo dialogues develop and leads to:

- Tolerance of people for longer periods
- Eye contact
- Attending
- Responding
- Attuning
- Predicting
- Imitation



Show baby imitating daddy

When and How does it happen? Communication before Language (8-12 mths)

- Intentional communication but unconventional means (pushes the bowl of food to the ground, puts hands up to be picked up, arches back....)
- Intentional communication with conventional gestures and vocalisations shakes cup in front of mother, shakes head, e. g. *ba, ba* (baby)
- Drops cup to ground looks at cup looks at mother

Establishing of intersubjective understanding and mutual intention between child and adult 12 mths.

Joint attention

- **Joint Attention** is the process of sharing one's experience with another by looking back and forth between the two or observing an object or event, by following the gaze or pointing gestures of another and looking back and forth between the two.
- It is critical for social development, language acquisition, cognitive development...



Joint Attention

- 2-3 mths. infant smiles to adult smile
 - 8 mths follows parent gaze
 - 10-12 mths. follow parents point and look back at parent
 - 12-14 mths initiate a point to get something out of reach
 - 14-15 mths draws an adults attention to something of interest using sounds and points looking back and forth
- 12mths+ First words
18 mths two word utterances

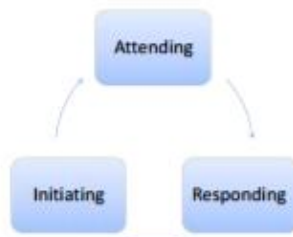


Show JA clip

Importance of Prelinguistic Communication Skills

- Preverbal/prelinguistic communication teaches the child about the social and communicative use of language i.e. message are sent and received- there must be a listener and a speaker.
- It is a base on which the language is built

Elements of a Good Listener-Speaker Relationship



Road to being Effective Communicators

(Bochner & Jones 2001)

Levels	Language development
Preintentional	Early vocalisation and non-vocal activity: parents attach meaning to infant actions and sounds that are not yet intentional
Level 1	Preliminary Skills (0-9mths) <ul style="list-style-type: none"> • Looking together • Turn-taking and imitation • Appropriate play
Level 2	Preverbal skills (8-12 mths). <ul style="list-style-type: none"> • Performative (oh-oh, hr mm, hr mm) • Protowords (non conventional/ made up words) • Gestures (pointing)
Level 3	First words (dog, Mom car) By 12 months
Level 4	Early Sentences (daddy car, dog gone, boy fall down)
Level 5	Extending meaning (adding morphemes (s))

DSM IV (2000): Qualitative Impairments in Communication as manifested by at least one of the following

- Delay in, or total lack of, the development of spoken language....
- In individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others
- Stereotyped and repetitive use of language...
- Lack of varied, spontaneous make believe play....

In other words...Difficulty acquiring communication and difficulty acquiring a system

Children with ASD may have difficulties with:

- Noticing / Responding /Attending to visual and auditory information
- The ability to imitate gestures and sounds
- The use of basic communicative gestures
- The ability to take turns
- Achieving shared attention (tolerating others in his space) /eye contact
- Achieving joint attention
- Achieving intentional communication and intersubjective understanding
- Achieving Speech
- Achieving recognisable/readable form of communication
- The ability to associate a word they hear with its meaning.

For communication to occur

- Something to communicate about (an awareness of one's needs and concepts and a knowledge that they can be acted upon)
- A means for communication (spoken language or some alternative)
- A reason for communicating (needs to be motivated)

(Kiernan, Reid & Goldbart, 1987)

Important aspects of communication

- Takes place in a social context
- Has a number of different purposes
- Consists of initiations and responses
- Needs a hearer as well as a speaker

Communication and ASD

- In normal development, communication precedes language and is the main means for language learning
- This pattern is disrupted in ASD
- Schools (Teachers & Staff) assume that spoken language follows communicative understanding and that it is present when the child presents at school. And often do not address the early stages of communication

Appendix 12: Shared Engagement

Tish Balfe : Special Education Department
St. Patricks College, Drumcondra

Afternoon 1st Collaborative PD Meeting



Interaction Sessions

Teachers:

- A minimum of 10 minutes 1:1 interaction each day, five days a week to implement the strategies discussed at the PD each month*.
- Try to incorporate the strategies into other subject areas ART, PE, Music time..
- Set up opportunities throughout the day to practice the skills

SNAs:

- If you have a play session with the child use the strategies talked about at the PD*
- Be alert for opportunities throughout the day to implement the strategies
- Try to set up situations to use the strategies at Coming in time, Lunch time, Yard time, home time

*Use a Visual to indicate when it is happening on his timetable, label what is happening consistently

Child's Skills in the 1st year

- The adult and infant are social engaged with each other
 - 0-6 mths During this time the infant
 - Attends to faces, sounds, eye gaze, and points
 - Responds to faces, sounds, eye gaze and points
 - Imitates the gestures, mouth shapes, sound intonation
 - Becomes proficient to attuning and responding to adults verbal and non verbal expressions
- Participating in Pseudo dialogues/protoconversations
These early skills are the foundations of Communication

Child's Skills in the 1st year

- 8mths → 10 mths Child begins to follow adult's gaze or point
 - Child attends only to the adult **OR** the object
 - Child's behaviour is non-Intentional -has no intended outcome, not directed towards a partner
- But has a Communicative effect

Because.....

Adult's Support in the 1st Year

- Attends to
- Attunes to
- Follows
- the child's head, body, hands, feet, actions and vocalisations

the adult assigns meaning



Child's Skills late in the 1st year

- 10 mths → Child begins to follow the adults point, gaze, and look back towards Adult
- Child gradually becomes **Intentional** in his communication but using unconventional means (pushes the bowl of food to the ground, puts hands up to be picked up, arches back....)
- Begins to use Conventional means of communication eg giving, pointing to, pushing away

Adult's Support at this stage

- Attends to
- Attunes to
- Follows
- Comments
- Responds **consistently**

**the adult
gives control**

Show choice clips




How can they be developed?

First Step

Establish a firm bond between You & the Child


- Eliminate Intrusive Directive Talk
- Follow the child's lead
- Allow the child to have control with the interaction




Types of Directive talk

Directive talk requires a response

- **Intrusive directives** (Directives that initiate a new topic causing a shift of the child's attention)
- **Communication Cues** (expecting a response what is it? Do you want it ?
- What colour is it?)





Intrusive Directive talk

- Look
- Look here ,
- Watch this
- Point to
- Sit down
- Stand up
- Don't do that
- No!

Reduce
Reduce
Reduce

Follow the child's lead

- Offer a choice/choices of toys/games/activities which are highly motivating for the student
- Stay face to face with the student where possible- get down to the student's level
- Have a similar activity for yourself
- Attend to the child's focus of attention
- Watch his/her gestures, emotions, posture, what he does with the objects

MAKE NO DEMANDS:
Follow, Follow, Follow

Show follow lead clips

MIRROR, MIRROR, MIRROR

- Imitate what he does with the object as precisely as possible
- Imitate what he says /vocalises
- Imitate his gestures as precisely as possible
- Imitate the timing
- Attempt to see and experience the actions from the child's perspective
- Join in the child's play
- Be sensitive but persistent (only imitate appropriate behaviour)

Be Unobtrusive

Maintaining the Interaction

Be observant

- Allow the child to control the tempo
- **Allow the child to switch to another activity (follow lead). (Clip 4)**
- Be alert to child's waning interest and have motivating activities ready to offer a change.
- Allow the child to dictate the level of interaction withdrawing slightly when required, joining in robustly when allowed

Maintaining the Interaction

- Avoid asking questions
- Avoid redirecting attention
- Provide on going commentary on the child's actions and object focus
- Be aware of non verbal behaviours that are sending a message
- Be aware of behaviours that are accidental but can be interpreted as intentional

Wait..., wait..., wait...,
for the child to communicate
with you

Show wait clips



Implementation

- Select duplicates of activities that the child finds motivating
- Select one/two strategies to concentrate on during the each lesson/interaction **initially**
- Gradually guild in the others
- **Teachers-** video one session each week
- Teachers and SNAs reflect on the lessons/interactions each week by completing the learning logs
- Upload the logs each week on the moodle site

Learning Logs

- Have I achieved anything? If so, what?
- What progress have I made
- Have I put any theory into practice?
- How can I use this to plan for the future?
- How can I use this to plan new learning?
- Experiences?

Next PD on October 15th @ 9.00 to begin at 9.30???

Appendix 13: Modified Reflective Diary

Reflective Diary Name: _____ Date: _____	Maintaining Interaction Strategies <p>Attune offer choice No questioning child to control switch activities Parallel Play comment wait Get down to child's level Fun, Fun, Fun No directive talk Fun, Fun, Fun child's lead</p>
---	---

Description of Social Communication interaction

This week I worked on the following objectives:

Reflection:

Explain what you did

Which of the strategies mentioned in the diagram above did you use? Give an example or examples of using the strategy/strategies successfully and its effect on the child. Reflecting on the interaction was there any other strategy/ies you could have used and in what way would you have used it/them?

Next Step

Document any ah-ha moments, any questions and challenges that arose for you in relation to the teaching and learning of social communication. We will discuss and share how you worked on and expanded on them at the next PLC.

Appendix 14: Learning Log

Learning Log for Social Communication PD

Name: _____ Date: _____

1 **How much of today's content did you know already?**

Most of it	Quite a bit	A little	None
------------	-------------	----------	------

2 **How much of the content had you already been implementing?**

Most of it	Quite a bit	A little	None
------------	-------------	----------	------

3 **Mention 2 significant things that you learned at the PLC today?**

4 **What did you learn today that surprised you?**

5 **What was the greatest benefit for you from today's meeting?**

6 As a result of today's meeting, what do you plan to do differently?

7. What do you need further help with

8. At this stage of the Social Communication Project, what is your greatest need?

9. The meeting could be improved by

Appendix 15: Handout for 2nd PD Meeting

Meeting 2 Sustaining/Maintaining Strategies



Timetable

- 9.00- 9.30 Meet & Greet (down loading of videos)
- 9.30- 12.00 Reflection on interactions
- 12.00- 1.30 Working Lunch (New content- Maintaining Strategies)
- 1.30- PD Learning Logs

Objectives of Meetings

- To work collaboratively to improve practice and to enhance student learning in relation to social communication.

This involves

- Shared vision, goals
- open dialogue and collaboration (openly sharing problems and dilemmas)
- On-going reflective practice
- Supportive environment (Blanton & Perez, 2011)



You are asked to

- trial new ideas introduced at each meeting in the classroom/school.
- collaborate, by sharing and discussing the topics/ideas through the online space
- Share and discuss challenges, successes & dilemmas at each meeting

Objectives of the Interactions



Maintaining Interaction Strategies



Reflecting on Interactions

- View & Reflect on videos
 - What strategies is the adult using
 - Is the strategy working, and if so what is it achieving
 - If not what could be changed
 - Each teacher may flag up that difficulties they had during the month which they wish to share
 - What really worked well for the teacher
 - What materials worked well

Joint Attention

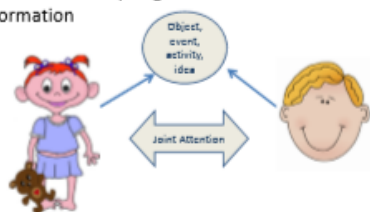
Joint attention can consist of any of the following:

- Coordinating attention between people and objects
- Attending to a social partner and track their behaviour
- Shifting gaze between people and objects
- Sharing affect and emotional states with another person
- Being able to draw another person's attention to objects or events for the purpose of sharing experiences...this can be commenting/ giving information
- An awareness of a social partners attentional focus, knowledge, and preferences

(Mundy, Sigman, & Kasari, 1990)

In Other Words...

- JA consists of two people attending and sharing the same thing (activity, event, or thought). Joint attention can be initiated and responded to. JA is the ability to give and receive information



Why use Sustaining & Maintaining Strategies

Deficits in joint attention are what keeps adults and peers from being able to “connect” with students with autism

- Building a bond
- Strengthen Child's knowledge they can influence interactions with others begins the process towards joint attention



- The new strategies introduced today build on and cement the bond now developed between you and the student,

However ,

- If you feel your child still does not trust you and does not have the skill to share attention for a period, you need to remain using the strategies you used last month just changing the activities.

Establishing & Maintaining Interactions

- Allow **the child control** the interaction initially
- Follow the **child's lead** (e.g. play a board game doing what they do without enforcing the real rules; comment on the toy they are playing with)
- **Imitate** the timing and precise sound, gesture, and body movement
- Add to this by...Gradually introducing a new element to the interaction. Model something new with the activity of choice *Do not direct* the child to imitate your action or sound



• Elaborate –expand/variation

once the student is comfortable taking control of the chosen play become more interactive

- add variation
- Expand on what the child does
- Model
- Playful obstruction (briefly interrupting an activity the child is doing).

Maintaining Strategies

- **Changing activities** when child loses interest/ when child changes activities themselves
- **Musicality** – Sing, Sing, Sing (Video)
- **Model** words by commenting on what is happening
- **Extend** – Child says “bubble”, you say, “yes a big bubble”
- Establish **predictable routines** (use the same framework and repetition to allow for increased understanding) (Video)
 - Identify a familiar routine and **choose target words** to use consistently during the routine for the whole week/ fortnight
 - Use **Action Rhymes/ songs /physical play/Blowing bubbles/blowing a balloon and letting it go)**



- Turn-taking activities/opportunities and leave pauses for child to fill in- Video
- **Balanced turns**
 - Use same word (My turn/Tish’s turn)
 - Take short turns
 - Wait for student to communicate for his turn
 - (Marble run, skittles, pairs, bubbles, wind up toys, dressing dolls,)
- Expectant look (different to waiting)



• Animation/ exaggeration (Video)

- Be excited about the activity
- Exaggerate gestures
- Use attention getting devices – perform an action the child finds funny/interesting



- **Playing dumb** (pretend we can’t do it, -we don’t understand)

Sharing attention

Use of books,

- Sit alongside student – **do not ask any questions**
- Wait
- Comment when given the opportunity on what you see



Interaction Sessions

Teachers:

- A minimum of 10 minutes 1:1 interaction each day, five days a week to implement the strategies discussed at the PD each month*.
- Try to incorporate the strategies into other subject areas ART, PE, Music time..
- Set up opportunities throughout the day to practice the skills

SNAs:

- If you have a play session with the child use the strategies talked about at the PD*
- Be alert for opportunities throughout the day to implement the strategies
- Try to set up situations to use the strategies at Coming in time, Lunch time, Yard time, home time

*Use a Visual to indicate when it is happening on his /her timetable, label what is happening consistently

Consider

- Did you write your objectives for what **you** would try to do?
- Did you adhere to this or did you stray into expecting the student to do something
- When you reflected could you see what you could do differently to engage the student
- The objectives for your interaction sessions are for **you** not the student

Maintaining Interaction Strategies



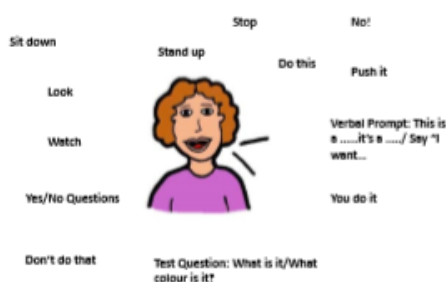
Appendix 16: Handouts for 4th PD Meeting

PD 4 Eliciting Strategies

Timetable

- 9.00-9.30 Coffee & Scones
- 9.30- 10.00 Types of Talk
- 10.00- 12.00 Discussion of Video
- 12.00 – 1.30 Eliciting Strategies
- 1.30 Learning Logs & New Reflective Diaries

Minimise Directive Talk



Facilitative talk

- **Model**
 - talk/action
 - -link appropriate /relevant words to child's focus of attention and processing capabilities (pouring the water/ rolling the ball)
 - Translates child's non verbal communication into simple words
- **Parallel talk** – when adult and child are engaged in same activity (adult talks for child)
- **Self talk**- adult talk about what s/he is doing (I'm washing my hands)
- **Recast** (adult rewords what child says- "Her did it/She did it, did she?
- (Simple language/ talk slowly/stress important words/ repetition)
- No Questions used
- No expectation on child to imitate /produce words

Expansions

- **Expand**
 - Talk | "car" yes that's the car. It is a yellow car, it is big. "oh you want the yellow whistle here it is" "sweet"- I want sweet. A big sweet/a lovely sweet
 - You can add
 - size
 - shape,
 - color
 - sound,
 - texture
 - taste,
 - Smell
 - Age
 - What it does
 - Where it lives
 - When we use it
 - Who has one
 - How it moves
 - How it works
 - Where we buy it
 - How many we have....

Link the expansion to the understanding of the child

Eliciting strategies

- Waiting
- Show
- In sight and out of reach
- Playful obstruction
- Control access
- Assistance
- Inadequate portions
- Sabotage
- Protest
- Silly situations (See coding frame)
- Deliberate ignoring
- Use of gesture
- Providing Choice

- These strategies will only work if there is a bond between the adult and the student
- Be attuned to the student and if s/he are beginning to become frustrated return immediately to facilitating strategies and utterances (**follow the child's lead/switch activity, musicality, exaggeration...**)

Golden rules

- Minimise your language and use non verbal strategies where possible to elicit communication
- **Plan** what eliciting strategies/utterances you will use for the communication sessions

Eliciting Strategies

Waiting	Wait expectantly while you count to six silently to allow the student to say or do something before you repeat action or utterance or use another action or utterance
Waiting 2	
Deliberate ignoring	minimise talk and ignore the child's initial communication to elicit stronger/alternative communication
Gestural Prompt	Tap or point to item and wait (no speech) or use exaggerated gestures (hands out and up turned in a questioning manner)
Assistance	Supply motivating activities that require you to assist (items in tightened containers, balloon to blow, flying items)
Show	Allow student to see item and wait
Control access	Student can only access motivating items through you; item is visible but not available

Eliciting Strategies

Missing items	Omit some of the activity (paint paper no brush), favourite jig saw (piece missing)
Playful obstruction	Adults proactively and playfully interrupts the child's play
Inadequate portions	Small amount of paint, few blows to balloon, short wind up of toys- child needs to request more
Funny situations	Adult is comical in an exaggerated manner (puts child's coat on, put stickers on one's face and wait for reaction)
Providing choice	Wait silently while child chooses
Mix up routines	Purposely change child's routine (sequence of a known task/activity, give incorrect lunch/drink/shoe/coat/communication book...

Gestural Prompt



Control Access



Offer Choice



Eliciting talk

- Playful mislabelling
- Choice
- Open ended questions
- Funny situations

Appendix 17: Bringing it All Together Handout

Bringing it all Together

Tish Balfe
Special Education Department
St. Patrick's College Drumcondra

Transactional approach to Language Learning

The child's communicative behaviour influences the adult in terms of type of response, as well as frequency and complexity of the support provided.....

The adult needs to be proficient in recognising when support is needed, what level is required and when to step back



Difficulties of the developmentally Young Child with ASD

- Failure to respond to name – Social Orienting
- Atypical eye contact/ low rates social smiling
- Difficulty with visual tracking –Following gaze
- Difficulty imitating others
- Difficulty taking turns
- Difficulty watching what others do
- Difficulty disengaging visual attention
- Difficulty following other's point/gaze -RJA
- Low rates of showing /pointing to things to share interest with others -IJA

Shared Attention

- Having Fun
- Playful behaviour
- Imitate Child
- No demands
- Motivating Activity
- Follow lead
- Switch activity

TURN TAKING...

Singing With Puppets, Bubbles, Shape Sorter/Insects, Microphone, Trampoline, Lettuce game & Seg, Marble run, Connect 4, Bubble wrap, Colouring A Picture.

Label "My turn"
Initially use visual prompt
1:1 then groups

Imitation

Initially imitate the student

- imitate play with toys
- imitate gestures and body movements
- imitate vocalisations

Musical Instruments, Playdoh Foam, Clapping/Singing, Toy act, Farm act, Model Exaggeration, Mirror Play, Puppets, Action Songs, Gross Motor Actions.



Responding to Joint Attention
Follow Adult's
point/directional gaze



Develop Responding/Initiating Joint Attention

- Posters
- Surprise Bags
- Unusual items in room
 - huge balloon hung on wall out of reach of child
 - Motorised toys
 - Flying items
 - Changing known routines
 - Missing items (jig-saws, hats/communication books, paintbrush)

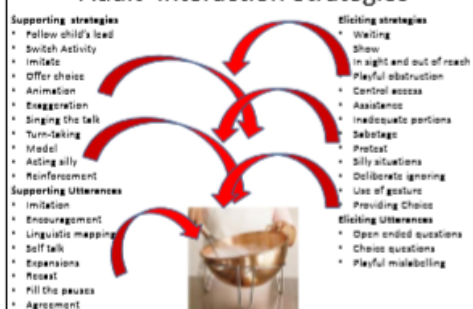


Initiating Joint Attention
Show- Point -Give

Quick alternation between the object and the adult's face



Adult Interaction Strategies



Environmental Strategies

- Use Visuals (choice boards, my turn, help...)
- Attune
- Parallel Play
- Child's level
- Simplified language
- Use predictable routines & repetition – target words
- Arranging the activity to enhance attention
- Arranging activity to promote student initiation
- Pace of interaction - Up the ante

Have Fun

Appendix 18: Lesson Plan

Social Communication Lesson Plan

Offer choice	Wait/pause	Child directs	Acting silly	Comment/self-talk
Child's lead	Switch activity	Imitate	Singing the talk	No intrusive questions
Child's level	Action rhymes	Attune	Expectant look	Expectant look
Animation	Use target word	Fun	Balanced turn taking	No directive talk
	Parallel play			Routines phrases/Act

Objective (s) (what do you hope to achieve)

Resources/Item(s)/Activities (what you begin with/ what you will use to switch)

What will you do with the item /activity?

Describe what strategies will you use and how you will use them.

Ideas to try in subsequent lessons

Appendix 19: Professional Development Participant's Evaluation Form

PD Evaluation

In your view, how true is each of the statements below? (Please tick one circle for each statement and write additional comments in the space provided.)

- 1 The topics covered at the meetings were pertinent to the challenges involved in developing communication and language skills of the pupils with ASD in the class.**

☐ Very true

☐ True

☐ Not at all true

2

- The discussion and feedback within the PD gave me the confidence to talk about problems I encounter with developing the pupils' communication and language.**

☐ Very true

☐ True

☐ Not at all true

- 3 The discussion and feedback within the PD has improved my ability to address those problems.**

☐ Very true

☐ True

☐ Not at all true

4 Viewing and discussing video clips from our classrooms illustrated the value of examining one's practice and questioning why a strategy worked/did not work

☐ Very true ☐ True ☐ Not at all true

5 Participation in the PD led me to use different strategies and activities in the classroom.

☐ Very true ☐ True ☐ Not at all true

6 These different strategies and activities have brought about improvements in the pupils' communication and language.

☐ Very true ☐ True ☐ Not at all true

7 The experience of being involved in the PD will make it more likely that I will continue learning about communication and language for pupils with ASD.

☐ Very true ☐ True ☐ Not at all true | ☒

8 Please indicate how useful the following were during the PD

- a) *Video review sheets* *Very useful* ☐ *Useful* ☐ *Somewhat useful* ☐ *Not useful* ☐
- b) *Learning Logs* *Very useful* ☐ *Useful* ☐ *Somewhat useful* ☐ *Not useful* ☐
- c) *Interaction Plan Development* *Very useful* ☐ *Useful* ☐ *Somewhat useful* ☐ *Not useful* ☐
- d) *Strategies taught at the PD* *Very useful* ☐ *Useful* ☐ *Somewhat useful* ☐ *Not useful* ☐
- e) *Facilitator* *Very useful* ☐ *Useful* ☐ *Somewhat useful* ☐ *Not useful* ☐

9 For me, the most significant benefit of the PD has been...

10 I would suggest that the PD could be improved by...

**I am sincerely grateful for the commitment and enthusiasm you have shown
since we began**

Regards Tich

Appendix 20: Social Communication Questionnaire

Social Communication Questionnaire

Child's name _____

	Never	Sometimes	Often	Always
Looks/turns to those who greets him/her				
Stops action when called by name				
Looks at adult when attempting to gain attention				
Allows adult to share in play				
Will seek adult to help				
Give examples				
Will look at adult and smile in enjoyment				
Give examples				
Takes turns in activities "Mr Potato Head- / Kerplunk / Connect 4"				
Takes turns in circle time without prompts				
Will give eye contact when requesting				
Show adult new item/book/ activity				
Give examples				
Point to show something interesting				
Will bring adult to something				
Put adult's hand on something to request				
Request using words spontaneously				
Greet familiar adults spontaneously				
Will request help spontaneously				
Will imitate what other classmates do				
Give examples				
Will imitate what class adults do during water play/playdoh/sand play/painting)				
Will wave "bye, bye" in response without prompts				
Will initiate a game				

Will respond using words without prompts				
Will follow simple directions “come here, sit down, tidy up, get your coat”				
Can follow a point when sharing a book				
Can get something when directed by a point in the classroom				
Give Examples				
Will imitate without prompt for action songs				
Uses adults’ names to get attention				
Will fill in gaps in familiar rhymes /stories				
Will seek “more” through words/or gestures				
Give examples				
Will refuse appropriately using gestures or words (words/push away/head shake)				
Can follow your direction of “look” plus pointing finger				
Will approach an adult to get an object				
Will watch other children play				
Will look at others and imitate them				
Give example				
Uses words/ sentences appropriately				
Give examples When/ why/where and with whom				

(Informed by Rogers & Dawson, 2010; Buckley, 2003; Cumine, Leach & Stevenson, 2003)

Appendix 21: Description of PEP-3 Items used in the Assessment

The Expressive Language subtest consists of 25 items and assesses the child's ability to express him/herself using words or gestures and it includes a variety of tasks such as naming items, numbers or colours, use of words to request, using plural, speaking in sentences and similar.

The Receptive Language subtest consists of 19 items that seek to identify the child's understanding of body parts, colours, shapes, letters, and action words.

Cognitive Verbal/Preverbal subtest has 34 items and measures the child's cognition and verbal memory ability and includes problem solving sequencing, verbal imitation and visual motor integration.

The Visual-Motor Imitation subtest has 10 items and requires the child to imitate visual and motor tasks.

Social Reciprocity measures social interactions with the assessor and consists of 12 items that include turn-taking, attending to the examiner, initiations during assessment, and remaining in social play with examiner.

Affective Expression subtest has 11 items which explore the child's appropriate affective responses. Items include enjoyment of sharing social routines with the assessor, ability to show appropriate emotions, to attend and transition during the testing session.

(Modified from the PEP-3 Assessment manual)

Appendix 22: Codes for Adults' Utterances

If Adult says something and does something simultaneously code both separately.

If the Adult adds an utterance within a second of another, code both as one utterance.

If two types of utterances occur in speech code the final utterance.

Code	Utterances
Directive	Utterances that direct the pupil's behaviour /attention
Behaviour Control	Controlling talk: Call pupil to attention by name, use of command to redirect and reduce noncompliance "Don't do that" / "Look here"/ "Sit down"/"watch"/ "No..."
Command:	"Your turn"/ Throw it/ push it" requires an action response
Yes/No Q	Do you want it / want more bubbles?
Test question	"What is it/ what colour is it" – to elicit an known answer
Verbal Prompt	"This is a..." prompts pupil to communicate by leaving or intonation; Pupil reaches for an item, Adult labels it (verbal prompt) and waits. Adult says "Say I want..." Adult fill in pauses before 3 sec has elapsed
Eliciting	
Open ended Q	"What would you like to do now/ What happened"?
Choice Q	"Do you want the ball or trampoline"?
Playful mislabelling	When pupil chooses pink playdoh, Adult gives the pupil purple playdoh and says "here's pink"/ Adult says "it's a snake" when it really is an elephant
Seek Clarification	When Adult seeks extra information- "what do you mean, tell me more"/ or stronger communication from the student "pardon/what"
Facilitating	Utterances that maintain the pupil's engagement
Imitation	Imitate what the pupil says in support or agreement of child's utterance e.g. if the student roars like a lion/ adult imitates
Social comments	Acknowledge good behaviour, "Thank you" praise "well done, good boy" and words of encouragement "nearly there/ almost finished/ oh hard luck" Also /goodbye/see you
Linguistic mapping	Adult immediately provides a descriptive label for what the pupil does sees and hears. "pouring the water" "The dog is very happy to see you".

Self-talk	Label what you the interactive partner is doing “I pick this one/I want red”
Expansions	The Adult follows and lengthens the utterance into a phrase or a phrase into a sentence. “Ball” –The red ball, “want car” -I want the car”
Recast	Adult repeats the pupil’s comment but using the correct vocabulary, grammar and or syntax
Fill the pauses	Adult fills the pauses of a verbal prompt having waited 3 sec. Also code when Adult uses social routine/ familiar song/ poem and pauses, round & round the garden ready steady... On your marks get set...
Agreement	Adult agrees with what the pupil communicates “Yes it is a ball” / Ok/ you’re correct/you are right.
Directive Strategies	
Redirecting	Adult points /taps/shows/ physically prompts to command or reduce non-compliance or redirect the pupil
Blocking	Adult blocks or hinders the pupil from the motivating item to redirect or to ensure compliance and attention
Removing	Adult removes motivating item to redirect or ensure compliance and attention
Show	Adult shows item to elicit a known answer /routine
Facilitating Strategies	Strategies that facilitate and prolong social interactions
Imitation	Imitate what the pupil does
Follow Pupil’s Lead	When pupil changes routine the Adult follows the pupil
Turn-taking	Activities / routines that require turns
Reinforcement	Giving what the pupil has communicated for e.g. if pupil says or closes book deliberately to indicate finished Adult finishes activity/if pupil requests through utterance or behaviour for item Adult gives it
Acting Silly	Doing things incorrectly deliberately
Musicality	Singing songs about what is happening
Exaggeration	Use of over exaggerated gestures
Animation	laughter and fun words (high five, yes, AH HA/ OOOOps, Ouch, UH OH and pitch
Switching Activities	Changing activities/actions within the interaction session when pupil loses interest /or when the activity becomes pervasive
Model	Adult models an action or gesture during interaction session e.g. rolling /elongating playdoh, model driving a car
Pupil’s level	Adult gets down to student’s level

Eliciting Strategies	Strategies that evoke communication
Gestural Prompt	Use exaggerated gestures e.g. hands out and upturned in a questioning manner (no speech).
Waiting	Leaving pauses of 3 sec and waiting expectantly until pupil says or does something before repeating action/utterance or use another action or utterance.
Deliberate Ignoring	Ignoring without talk the pupil's initial communication to elicit stronger/alternative communication
Playful obstruction	Adult proactively and playfully interrupts the pupil's play bangs car into pupil's car/ puts finger in marble run/ keeps thumb on book page. Note: it is pre-planned and differs from "blocks" which is reactive and directive
Missing items	Omit part of the activity e.g. colouring -no paper/ paper no scissors/headphones no player/ piece of jigsaw missing
Control access	Pupil can only access motivating items through Adult; items are visible but not available to pupil
Assistance	Supply motivating activities that require you to assist (items in tightened containers/balloon to blow/items to activate/fly
Funny Situations	Adult is comical in an exaggerated manner- put on hat/ sit on pupil's chair/ put stickers on one's face
Inadequate portions	Pupil needs to request more (small amount of drink/paint/1 push on swing/short wind up of toys/few blows of balloon
Providing choice	Present items and silently allows pupil to make a choice
Mix up routines	Purposely change pupil's routine (sequence in day/ sequence in task/activity/change student's chair/ place/ desk

(Adapted from Aldred, Green & Adams, 2004; Girolametto, Sussman & Weitzman, 2007; Hwang & Hughes, 2000; Ingersoll & Dvortcsak, 2010; Ingersoll, Dvortcsak, Whalen & Sikora, 2005; Masur, Flynn & Eichorst, 2005 & Leach & LaRocque, 2011)

Appendix 23: Codes for Pupils' Utterances

<i>Code</i>	<i>Communicative Function</i>
Behaviour Regulation	
Request, object /action/help	Use code for any communicative act where an object, toy, help with a toy etc. is requested, whether this is spontaneously initiated by the child or prompted by an adult.
Refusal/ protest	Use code for a range of behaviours from appropriate refusal to inappropriate screaming as a protest/noncompliance. Acts used to refuse an undesired object or request or a command for another to stop an undesired action should receive this code. e.g. crying, shouting, throwing, pulling away, and pushing away.
Compliance	Acts of cooperation with the adult. Code when the pupil is following instructions, or when pupil fills pauses that are left by the adult in his/her speech. Pupil answers directive questions
Ignore	Code when the pupil turns their attention away from the adult or does not comply to adult's commands e.g. turns their back, continues playing as if the adult is not there.
Dyadic Social Interaction	
Request social routines	Pupil makes a request for a game/activity that is clearly social in nature e.g. tickling, hugging, round the garden or any game that involves interpersonal interaction
Showing off/seeking attention	Acts used to attract another's attention to oneself Seeking attention /calling someone for play "Hey" "Look/Watch"
Acknowledgement	Acts/verbal acts used to indicate notice of adult's previous statement/action; involves the pupil focusing attention on or shifting attention to the adult Answers through verbal/non-verbal behaviour yes/yep/ok/thanks/ in answer to questions/utterances e.g. "Do you want it/ will we finish/play Is this yours?" Pupil says "finished/done it/excuse me" (trying to get attention)
Imitation	Pupil imitates what the adult does or says

Turn taking	Pupil remains attentive in the interaction waiting for a turn and takes a turn; this code is used each time the pupil takes a turn.
Joint Attention	Utterances that maintain the pupil's engagement
Comment/shared attention	Comment is coded when the pupil verbally or nonverbally refers to an event, object or action in order to share attention/information with the partner. (e.g. pupil looks at a balloon as it deflates then looks at the teacher and laughs).
Request information, clarification	Acts used to seek information, explanations or clarifications about an entity, event, or previous utterance; includes "Wh" questions or inflection in utterance. May also include requesting information or clarification.
Tune out	Code when the pupil stares into space/ stares through the adult/sits immobile not interacting with adult or object.
ROLE	
Initiation	Pupil spontaneously initiates an interaction/ it is never coded as initiation if prompted verbally/physically by the adult. Initiation is also coded if pupil elaborates e.g. do you want a sweet, pupil says "two sweets"
Response	When pupil responds to an instruction /prompt /question /action or suggestion. Coded even when the pupil's response is incorrect or indicates non-compliance verbally (no) or action (turns away/slumps)
Non-interactive/no response	Code when pupil withdraws/avoids interaction/responds in a non-meaningful/stereotypical behaviour. Code when pupil approaches another in a non-interactive manner (to take something). Uses other to request assistance (puts adult's hand on tightened jar without eye contact). Echolalia used with no communicative intent (pupil talks to himself/herself). Nonresponse is used when the pupil does not respond in any way to a request/prompt/approach.

Form	
Speech	Speech may include speech word approximation and poor intelligibility speech so long as there is contextual information to identify what student is saying (ba =Ball) it must be used with apparent communicative intent. Echolalia is considered speech if apparent communicative intent.
Vocalisation	Vocalisations such as; crying/moaning/wailing or laughing, infused with apparent communicative intent.
Single word	
Two-word phrases	
Three- word phrases +	
Non-Verbal	
Picture/symbol/sign/Makon	The form of an interaction is coded as these if it involves the pupil using these (giving /pointing)
Gesture/pointing	These include head nodding and shaking, pointing, descriptive, demonstrative or instrumental gestures
Action	Covers a range of behaviours (sitting down, reaching, walking, turning, placing) Coding can occur if there is a communicative partner involved) also code behaviours that involves ignoring partner.
Eye contact	Pupil looks to the face of another; may be in response of another's action or utterance.
Gaze switch	Pupil alternates gaze between object and person to establish social attention coordination. There must be a 3- point shift object person object/person object person.
Looks to target	Pupil looks to where/what the adult is pointing/looking /holding/doing- always coded as a response.
Show/give	The pupil deliberately hand/gives or orients the object where it can be seen (to share interest/to get help).

(Modified from Clifford, Hudry, Brown, Pasco, & Charman, 2010)

Appendix 24: Codebook - Exploring a Model of Professional Development

Codebook

Codebook-Phase 1 – Initial Coding & Noting

Phase 1 – 118 Initial codes Developed	Code Definitions for Coding Consistency	Participants Coded	Units of Meaning Coded
Description of Activity	Report is describing the activity rather than the strategy use	104	105
Description of Strategies	Can describe the strategies they endeavoured to use or observed others using	12	12
Analysis	Articulates whether the strategies were successful or not own or others practice	1	1
Evaluation	Endeavours to explain why the strategy worked or did not work	1	1
Metacognition	Thinking about their professional beliefs attitudes and knowledge	40	46
Academic Strengths	Attributes success or difficulty to child's abilities	9	22
Activity	Attributes success or difficulty to the activity	4	43
Adult Reported Ability to Support C&L	The adults perception of their personal ability to support/ teach C&L and reports of how they currently support and teach C&L	9	44
Adult reported Communication Challenges	Articulating their difficulties	9	27

Phase 1 – 118 Initial codes Developed	Code Definitions for Coding Consistency	Participants Coded	Units of Meaning Coded
Adult Success	Recognition of good practice	4	41
Affective	Talk of improved relationships	11	18
Affirmation	Acknowledging others good interactions	5	45
Alternatives about Strategies	What strategies could have been used	26	28
Analysis not referring to Interaction Session		3	3
Answers Questions		5	8
Alternatives about activity	What changes could have been made to the activity	34	55
Attention to others	Students attention to others	18	27
Change in Attitudes	Evidence of change in attitude	5	8
Change in Beliefs	Changes in thoughts	9	26
Change in Practice	Evidence of changes in what they doing with child	10	29
Collaboration	Problem solving within discussion session	3	24
Collaboration back in School		12	27
Collaboration with the Other PD members	Talk of seeking help from peers	5	5

Phase 1 – 118 Initial codes Developed	Code Definitions for Coding Consistency	Participants Coded	Units of Meaning Coded
Comments from other adults	Reference to supportive comments from peers	3	4
Communication and Language Challenges	Adults' views of the challenges the student has in communication and language abilities	10	60
Communication and Language Strengths	The adults' view of what strengths the student has in communication and language	10	45
Communication Strategies already used		7	12
Constructive Criticism	Evidence of making suggestions to peers	5	65
Discussion	What was the value of the discussion. The participants views and evidence that they impacted on the change	1	1
Discussion about own Interactions	Making links between what they see or hear to own practice	2	19
Dissonance	New knowledge received at PD that didn't sit with previous beliefs	44	58
Engagement with others	Students interacting with others	10	18
Evidence of bad practice	Participants identifying bad practice	2	2
Expectation for adult	What the adults hopes to achieve fro PD	10	14
Expectation for Child	What adult hoped the child would achieve from the adult's participation in PD	10	14
Facilitator support	Reference to the value of the facilitator during the process and after	1	1

Phase 1 – 118 Initial codes Developed	Code Definitions for Coding Consistency	Participants Coded	Units of Meaning Coded
	the PD and evidence of the value of the facilitator		
Feedback from others	Reffing to what they hear from peers	7	18
General Changes	Changes other than practice	8	10
Getting ideas from others	Using what they saw or heard from others	7	15
Greatest Benefit	What was the greatest benefit derived from the PD	47	48
Identification of Strategies Implemented	Articulating what strategies were being observed	5	75
Identifying Failures	Articulating what they believed they did wrong	5	23
Identifying Omissions	Articulating what they believed they should have done	4	21
Identifying Positive Changes	Applauding changes in practice	4	32
Identifying Specific Strategies		10	40
Identifying Success	Articulating positive outcomes	5	46
Identifying what needs to Change	What they need to change	5	28
Identifying what works	What strategies are working for their students	5	57
Implementation of New Knowledge	What changes they will make	5	32
Implementing Already	Noting the strategies they are using	44	44

Phase 1 – 118 Initial codes Developed	Code Definitions for Coding Consistency	Participants Coded	Units of Meaning Coded
Initiation	Reference to pupils initiations	24	38
Intention to Implement Change	What changes the adults intend to implement	45	45
Know already	Identifying strategies already aware of	45	46
Language	Examples of child language use	39	65
Looking at others videos	Value of	9	14
Motivation for Adult	Why the adult participated in PD	5	6
Negative Analysis of Activity	Attributing problems to the activity	17	18
Negative Attributes of Student	Referring to own student	9	46
New Knowledge	What new knowledge had been accessed	56	103
No Change in attitude	Talk that shows negative attitude	7	10
Others Articulating Challenges	Valuing others articulation of difficulties	1	6
Others Observations	Valuing others articulation comments	1	6
Outcomes for the Students	What changes the adults report for the students in their class arising from the PD	10	50
Outside Agencies		1	1

Phase 1 – 118 Initial codes Developed		Code Definitions for Coding Consistency	Participants Coded	Units of Meaning Coded
Participants view of attending the PD			10	38
Participants view of Making videos			6	11
PD Met Expectations			1	2
Positive Analysis of Activity		Attributing success to activity	33	33
Positive Attributes		Adults describe the student using positive attributes	8	27
Problem solving		Talk where problem solving is evident	3	5
Questioning		Participants asking questions	5	40
Reason for Difficulties		Identifying why	8	44
Reasons for Success		Identifying why	4	21
Recognition of lack of knowledge		Acknowledgement of their lack of knowledge	44	82
Refer to self mainly		Attributes the success or lack of to own practice	33	36
Refer to student mainly		Attributes the success or lack of to the student	37	41
Refers to activity			16	17
Refers to Strategies			72	91
Reflect on others Practice			7	10

Phase 1 – 118 Initial codes Developed	Code Definitions for Coding Consistency	Participants Coded	Units of Meaning Coded
Reflective diaries		12	22
Reflective Diary	Value of Criticism of reflective diary	1	1
Relevance of Content		2	5
Relevance of PD	The adults reporting of the lack of success arising from the PD	9	23
Reporting Change in Self		3	11
Revealing Difficulties		5	43
Seeking Clarification		1	5
Self Reflection		1	3
Sharing		3	7
Sharing New Knowledge with Others	Adults identify sharing of the strategies with others	6	17
Sharing Practice	Adults view of sharing their classroom practice with others	11	22
Social Engagement	Reference to positive interactions	13	15
Specific Label of Strategy	Identifying the label of the strategy observed	124	141
Strategy		5	23
Student Change	Speaking of changes in the student	42	45

Phase 1 – 118 Initial codes Developed	Code Definitions for Coding Consistency	Participants Coded	Units of Meaning Coded
Student Dislikes	What upsets the student	6	12
Student Likes	What the student likes to do	10	38
Student Success	Noting moments of success	5	60
Suggestions	Giving suggestions to peer	5	49
Trust	Reference to the child developing trust with adult	7	10
Trust in others	Reference to the child developing trust with others	3	4
Two Adults attending	What were the adults thoughts	9	11
Two people attending PD from each class	Value of	2	3
Understanding what Communication is	Speaking about their understanding of communication	16	19
Using PD Strategies with Other Students		8	23
Value of new Knowledge		48	58
Value of Videoing own Interactions	What value the adults reported in the use of videoing their interaction with the student	11	42
Video	Was making the videos a chore or a hinderance	6	12
Video review sheets	Thoughts on	3	5

Phase 1 – 118 Initial codes Developed	Code Definitions for Coding Consistency	Participants Coded	Units of Meaning Coded
Videoed Interactions	What the adults thought of enacting the strategies	2	4
Without specific Label of strategy	Identifying what the adult is doing without reference to a specific strategy	16	16

Codebook-Phase 2 - Developing Subordinate Themes

Phase 2 – 118 Initial codes mapped and collapsed to 8 subordinate themes	Participants Coded	Units of Meaning Coded
<i>1-Baseline</i>	<i>11</i>	<i>384</i>
<i>2-PD Experience</i>	<i>66</i>	<i>1105</i>
<i>3-Learning Outcomes</i>	<i>133</i>	<i>527</i>
<i>4-Systemic Factors</i>	<i>218</i>	<i>3590</i>
<i>Adult & Type of Content Value</i>	<i>72</i>	<i>111</i>
<i>Adults X Planned Strategies Resource Changes</i>	<i>50</i>	<i>61</i>
<i>Adults X Self Reflection</i>	<i>62</i>	<i>85</i>
<i>Reflection Success Problems x Adults</i>	<i>93</i>	<i>147</i>

Codebook-Phase 3 – Developing Superordinate Themes

Phase 3 – Developing 2 superordinate themes – supported by 8 consolidated subordinate themes

Participants Coded

Units of Meaning Coded

Facilitator's Role	18	1766
Affirmation of Good Practice	5	53
Encouraging Participant Talk	18	1501
Offering Suggestions	5	162
Provide Clarification	5	50
Teachers' Perceptions of PD Initiative	107	1570
Empowerment	76	748
Improved Relationships	49	412
Learning together	16	185
Reservations	26	225

Example of Analytical Memos-

Exploring a Professional Learning Community (PLC) as a Model of Professional Development (NVivo 11).nvp - NVivo Plus

FILE HOME CREATE DATA ANALYZE QUERY EXPLORE LAYOUT VIEW

Workspace Item Edit Paste Copy Merge Format Paragraph Styles Editing Proofing

Look for Search In Phase 3 - Devel Find Now Clear Advanced Find

Nodes

- Nodes
 - Case
 - Original Coding
 - Phase 1 - Initial Noting & Co
 - Phase 2 - Developing Subord
 - Phase 3 - Developing Supero
 - Cases
 - Case
 - Sentiment
 - Relationships
 - Node Matrices

Phase 3 - Developing Superordinate Themes

Name	Sources	References
Facilitator's Role	18	1766
Affirmation of Good Practice	5	53
Encouraging Participant Talk	18	1501
Offering Suggestions	5	162
Provide Clarification	5	50
Teachers' Perceptions of PD Initiative	107	1570
Empowerment	76	748
Improved Relationships	49	412
Learning together	16	185
Reservations	26	225

Learning together is the "context" of the PD referred to in the literature but I feel "learning together" reflects best what context means. I need to draw all the nodes that identify the value of learning together together to make the argument for context specific PD from the participants perspective. The biggie for me is the evidence that the teacher and SNA are collaborating outside of meetings, cause it shows they are actually thinking about the PD and its not just for me.

Drag selection here to code to a new node

Sources Nodes Classifications Collections Queries Reports Maps Folders

In Nodes Code At Enter node name (CTRL+Q)

Analytical memos were used to conduct a systematic review if the thematic framework developed from the primary data

Appendix 25: Triangulation Matrix

Research Questions	Data Collection Instruments		Data Collection Points			Analysis	Informant
			BI*	I**	PI***		
What are the effects on the social communication skills of prelinguistic pupils on the autism spectrum (AS) when their classroom adults participate in a communication–promoting professional development initiative?	PEP-3 Assessment		X		X	Pre-Post Comparison	Student
	Social Questionnaire	Comm.	X		X	Pre-Post Comparison	Teacher
	Video Observation		X		X	Quantitative analysis.	Student
	Interviews		X		X	Qualitative analysis	Teacher & SNA
	Reflective Diary			X		Qualitative analysis	Teacher & SNA
	Discussion Fora			X		Qualitative analysis	Teacher & SNA
Does continuing professional development in communication-promoting strategies have a discernible impact on how the classroom adults interact with their young pupils?	Interviews		X		X	Qualitative analysis	Teacher & SNA
	Video Observation		X		X	Quantitative analysis.	Teacher & SNA
	Reflective Diary			X		Qualitative analysis	Teacher & SNA
	Discussion Fora			X		Qualitative analysis	Teacher & SNA
	Reflective Diary			X		Qualitative analysis	Teacher & SNA
	Learning Log			X		Qualitative analysis	Teacher & SNA

What is the adults' experience of their participation in the social communication professional development initiative?	Overall Evaluation of PLC	X	Qualitative analysis	Teacher & SNA
	Post Interviews	X	Qualitative analysis	Teacher & SNA
	Learning Logs	X	Qualitative analysis	Teacher & SNA
	Reflective Diary	X	Qualitative analysis	Teacher & SNA
<hr/>				
How did the presence of an “external facilitator” impact on the adult participants’ learning within this model of PD?	Discussion Fora	X	Qualitative analysis	Researcher, Teacher & SNA
<hr/>				

Appendix 26: Case Study Clonadoo

The Case Participants: The Classroom Adults

Síofra, (teacher) was in her late twenties and had a Post Graduate Diploma in Education. She had four years teaching experience two of which were in the autism class. During the first year in the autism class she had attended some short courses pertaining to ASD; TEACCH course, (7 days), PECS (1 day), PEP-3 (1 day), Social Stories (1 day), Intensive Interaction (1 day) and had completed a short unaccredited online module on ABA during her summer vacation. The year before joining the study she had completed the Graduate Certificate in the Education of Pupils on the Autism Spectrum (level 9). She had taught Freddy (the participant student) for a year prior to participating in the PD. (Table 26.1).

Sunita (SNA) was in her mid-forties. She had a childcare level 5 qualification. She had 2 ½ years' experience working as a SNA during which she had supported a boy on the autism spectrum for 6 months in a mainstream class. Sunita had worked for a year with Síofra and Freddy prior to joining the study. She reported that she had no specific training in the area of autism (Table 26.1), that she had learned from watching and talking to Síofra.

Table 26.1:*Demographic Information of Classroom Adults*

Clonadoo			
	Teacher		SNA
Name	Síofra		Sunita
Age	25+ years		45+ years
Highest Qualification	PGD-Ed		FETAC Level 5
Experience	4 years.		2 ½ years
Experience ASD	1 year.		1 ½ year
Autism PD	GCEAS and a number of short courses		None

The Case Participants: Pupil

Freddy, lived with his mother and brother. The family had come to Ireland from Africa when Freddy was less than a year old. English was spoken daily at home. Freddy was diagnosed as having ASD and a significant global developmental delay at 3 years 3 months--. Síofra described him as “*lovely*”, “*happy*”, “*he’s really nice*” stating “*everyone falls in love with him*”, while Sunita reported that “*he is real easy to work with*”

(Pre-PD Interview). Both reported that he approached adults when he could not access something himself and enjoyed when they played with him. He rarely initiated an interaction and had no interest in his classroom or mainstream peers. Síofra stating, “*you know he is quite happy to sit on his own and do his own thing*” (Pre-PD Interview).

Freddy was 4 years 9 months and completing his first year in a special class for students on the autism spectrum when he joined the study and when the initial data were collected on his social communication skills. He was 5 years 9 months when the follow up data were collected. The pre-PD PEP3 (Table 26.2 below) assessment identified that his expressive and receptive language abilities were less than a 12 month neurotypical child. His ability in social reciprocity was assessed as being in the severe range. The adults reported that he had some single words (e.g. “*no*” and the numbers 1-10) and some routine phrases (“*clean up*”) but he rarely used them. He did not attend playschool or access any early intervention programme prior to enrolling in Clonadoo School at the age of 4 years 0 months. During his first year at school and for the duration of the study the following year, Freddy did not have access to a speech and language therapist. He did not have autism specific support outside the school.

The post-PD PEP3 assessment indicated that Freddy had made some improvement in expressive language skills but not in his receptive understanding of language. However, Freddy was observed to make significant gains in his use of language during the post interactions in this study, suggesting that formal assessment may not be a true reflection of a child’s ability. Freddy’s score in reciprocity had improved greatly.

Table 26.2: Pupil Age, Nature of SEN and PEP3 Assessment Results:

Clonadoo						
Name	Freddy					
Age	4 years 9 months at beginning of study					
No. of years in school	1 year					
Nature of SEN	Autism with Significant Global Developmental Delay					
	Pre PD			Post PD		
PEP3 Results	Developmental Level	Percentile Rank	Age Equivalent	Developmental Level	Percentile Rank	Age Equivalent
Expressive Language	Moderate	33%	<12months	Moderate	25%	18 months
Receptive Language	Moderate	8%	<12 months	Moderate	2%	<12 months
Social Reciprocity	Severe	22%		Moderate	68%	

Section 1 Interactions Prior to the Professional Development Initiative

Context and Duration of Positive Shared Engagement

Table 26.3 below gives a brief description of the context of the pre PD 1:1 interaction sessions and the percentage of time the dyads spent in positive shared engagement. On average only 37% of the three pre PD teacher-pupil interactions sessions were spent in positive shared engagement while Sunita and Freddy spent 52% of their session positively engaged. Sixty-one percent of the actions and utterances used by Freddy with Síofra were interactive; (17%, initiations and 44%, responses) while 70% were interactive with Sunita (5%, initiations; and 65% responses) (Appendix 30, blue).

Síofra had one “Co-operative Activities” (CA) and two “Solitary Activities” (SA) sessions with Freddy. When the three interaction sessions were analysed separately, a number of findings emerged. The dyad spent more time in positive shared engagement during the “songs and rhymes” session (CA) than they did during either of the other two sessions (Table 26.3 below). Freddy initiated more frequently (Appendix 30, blue) and protested less often during that session also (Appendix 41). Síofra used “behaviour directive” communication least often during that session (Appendix 32). Freddy protested most frequently and spent least time interacting with Síofra during the book and jigsaw session. Síofra used “behaviour directives” most frequently during that session. Video analysis showed that he tried to look at the book and complete the jigsaw without acknowledging her efforts to interact with him while he did so. These findings suggest that the nature of the activity may have had an impact on the nature of the interaction between them. Sunita brought a “CA” to her session; and the adult-pupil positive engagement observed for more than half of the session may be explained by the fact that Freddy required Sunita’s help to roll the play-dough and to use the utensils. Interestingly, Sunita used more “behaviour directives” than “communication cues” during that session (Appendix 32) yet Freddy remained positively engaged with her for more than half the session suggesting the importance of the activity in ensuring positive shared attention.

Table 26.3: Context, Resources and Percentage of Session Spent in Positive Shared Engagement

Clonadoo Pre PD			
	Interaction Context	Resources	Percentage of Session in Positive Shared Engagement
Síofra and Freddy	Session 1 Solitary Activities (SA)	Reading a book and made a jigsaw	22%
	Session 2 Solitary Activities (SA)	Made cupcakes: 1 bowl, cup-cake mixture spoon, spatula, raisins, and cupcake moulds	37%
	Session 3 Co-operative Activities (CA)	Choice board of songs/rhymes and a CD player	51%
Sunita and Freddy	Session 1 Co-operative Activities (CA)	Play-dough, with a range of play-dough utensils	52%

Adults' Style of Communication and Student's Subsequent Engagement

Appendix 31 (blue) outlines the communication strategies and the frequency they were used by adults during the interactions. Síofra (teacher) and Sunita (SNA) communicated with Freddy at a rate of 15.7 and 19.0 actions and utterances respectively per minute. Freddy communicated at a rate of 8.5 (teacher) and 10.4 (SNA). Thus both adults were observed to dominate the pre PD interactions with a teacher-pupil communication ratio of (1.8:1) and SNA-pupil (1.9:1). The adults used a predominately non-directive style of communication; 62%; of both adults communication was non-directive. However, they used “behaviour directives” with high frequency each minute (Síofra, r.4.4; Sunita, r.5.9). *Verbal/nonverbal commands* were the main directive actions and utterances used by both adults.

The findings from a sequential analysis of the pupils' communication following their adult's use of directive actions and utterances are reported in Appendix 33 (blue). Over half of Síofra's directive communication was immediately followed by “ignoring” and “protesting” behaviours. Freddy ignored his teacher more frequently when she used “communication cues” suggesting that when the directive was “softer” Freddy choose not to engage with her. Sixty-eight percent of Freddy's protests followed his teacher's use of directive communication, almost all of them following her use of behaviour directives, suggesting that Freddy did not like to be told what to do. Freddy only complied with 39%

of Síoфра's in comparison to 60% of Sunita's directives. The use of a highly motivating activity by Sunita may account for this finding as video analysis indicated that Freddy was highly motivated to do what his SNA instructed him to do with the resources. Forty-two percent of Síoфра's and 52% of Sunita's pre PD communication was observed to be "facilitative"; *Linguistic Mapping*, *Follow Child's Lead* and *Model* were the facilitating strategies most frequently used by both adults. "Wait" was the only eliciting strategy used by the adults with any frequency (Appendix 31, blue).

Repairing interaction breakdowns.

A sequential analysis (Appendix 34, blue) identified that Síoфра used a range of strategies when endeavouring to regain Freddy's attention following his ignoring behaviours but used directive communication most frequently. Sunita used more facilitating strategies than directive or eliciting strategies. However, both adults used significantly more "behaviour directives" than "communication cues" to repair the breakdown. In addition to ignoring the adults, 11% of Freddy's interactive communication with both adults was *refusal/protests*" (Appendix 38, blue). Síoфра mainly followed his protests with directive communication while Sunita used facilitative actions and utterances mainly (Appendix 35, blue).

Pupil Utterances

Appendices 36 (blue) and 39b inform this section as they report the frequency, nature, role and function of Freddy's utterances with his classroom adults. Freddy was heard to speak on 14 occasions across the three interaction sessions with his teacher and on two occasions during the 10 minute session with Sunita. Seven of his utterances with Síoфра were initiations while both utterances with Sunita were responses. Eight of Freddy's utterances with Síoфра were 1-word, four were three words or more and two were vocalisations. Both utterances with Sunita were 1-word. Six of Freddy's utterances with his teacher were for "social interaction" purposes; he imitated her twice and on four occasions he sang the line of a song before she could prompt him. Six utterances were for "behaviour regulation" purposes; he protested once, made non-social requests on two occasions and complied with the teacher's command on three other occasions. He shared his enjoyment of the session with his teacher on two occasions (joint attention). Freddy spoke most frequently during the CA interaction session with his teacher (Appendix 36, blue).

Impact of adult communication on pupil utterances.

A sequential analysis of the impact of the adults' communication on Freddy's speech (Appendix 37b) indicated that five of his utterances followed his teacher's use of directive communication, 2 followed her use of verbal prompts and 3 followed "*behaviour directives*". The other nine of Freddy's 14 utterances followed his teacher's use of facilitative communication.

Section 1 Interactions Post Professional Development Initiative

Context and Duration of Positive Shared Engagement

Co-operative Activities (CA) were used by the teacher during all three post PD sessions, while a SA was used by Sunita (Table 26.4 below). The dyads spent the majority of the sessions in positive shared engagement (Síofra and Freddy, avg. 74%; Sunita and Freddy, 62%) with Síofra and Freddy doubling the time they spent positively interacting. Eighty-four percent and 82% of Freddy's actions and utterances with Síofra and Sunita respectively were "interactive" during the post PD sessions (Appendix 30, blue).

While the time spent in positive shared engagement was considerably greater during each of the teacher-pupil interaction sessions, it decreased as the sessions progressed. A possible explanation for this finding may be that the teacher brought many of the resources to all three sessions and Freddy's interest may have been waning (Table 26.4). This finding mirrors the finding from the post PD Shanbailey teacher-pupil interactions. Although the time spent in positive shared engagement increased during the Sunita's post PD session, the outcome was not as significant as Síofra's sessions. The context of the interaction (SA) may have influenced the outcome. Video analysis revealed that Freddy had a watch on his wrist and during the session he spent time endeavouring to trace around it is ignoring the SNA despite her efforts to engage with him.

Table 26.4: Post-PD Interaction Context, Resources and Percentage of Session Spent in Positive Shared Engagement

Clonadoo Post PD			
	Interaction Context	Resources	Percentage of Session in Positive Shared Engagement
Síofra and Freddy	Session 1 Co-operative Activities (CA)	2 different coloured canisters of spaghetti string bubbles coloured balloons and a balloon pump	82%
	Session 2 Co-operative Activities (CA)	2 different coloured canisters of spaghetti string car and car run; 2 xylophones and batons and funny glasses	72%
	Session 3 Co-operative Activities (CA)	Pop gun and ball; a popper toy bubbles; spaghetti string and a hopping frog	68%
Sunita and Freddy	Session 1 Solitary Activities (SA)	2 blank sheets of drawing paper and a bowl of crayons	62%

Adults' Style of Communication and Student's Subsequent Engagement

Both adults increased their rate of verbal and nonverbal communication during the post PD interactions (Síofra, r.25.1; Sunita, 22.5 per minute) (Appendix 31, blue). However, Freddy's rate of interactive communication within the interactions had almost doubled (r.16.6) with his teacher and increased to 14.4 actions and utterances per minute with his SNA (Appendix 38, blue). Thus the adult to pupil communication ratio had decreased. The frequency of Freddy's initiations (verbal and nonverbal) had more than doubled with his teacher and increased six-fold with his SNA (Appendix 30, blue).

There was a noticeable increase in the adults' use of non-directive communication during the post PD interactions in particular, their use of facilitative communication (Síofra, 67% ; Sunita, 66%) (Appendix 31, blue). Síofra had widened her repertoire and increased her use of "facilitative" strategies; she used 6 "facilitative" verbal/nonverbal strategies more than once a minute now, doubling her use of "*Linguistic mapping*" and "*Follow Child's Lead*" strategies. "*Linguistic mapping*", "*Imitation*", and "*Follow Child's Lead*", were the strategies most frequently used by Sunita. Both adults had increased their use of verbal and nonverbal "*imitation*" considerably; Síofra imitated what Freddy said or did at least once a minute (r.1.1) while Sunita used the strategy 3.8 times per minute. Only 12% of Síofra's and 22% of Sunita's actions and utterances were

directive now, although Sunita continued to use a high rate of “behaviour directives” (r.4.2). “*Waiting*” continued to be the only “eliciting” communication strategy used with any frequency by the adults

The incidences of “*ignoring*” behaviours by Freddy reduced with both adults with the frequency almost halving during his interactions with his teacher (Appendix 38, blue). However, a sequential analysis indicated that 33% of Síoфра’s and 45% of Sunita’s directive communication was immediately followed by “ignoring” and protesting behaviours, highlighting the importance of eliminating directive communication.

Repairing interaction breakdowns.

Only 16% and 18% of Freddy’s actions and utterances were “non-interactive” (Appendix 38, blue) during the post PD sessions. Sequential analysis of the post PD data indicated that when Freddy became “non-interactive”, both adults endeavoured to repair the communication breakdown in a “facilitative” manner (Appendix 34, blue). Sixty-six percent of Síoфра’s and 61% of Sunita’s subsequent communication was “observed to be “facilitative”. Analysis showed that, “*Linguistic mapping*”, “*Waiting*”, “*Follow child’s lead*” (n.8) and “*Switch Activity*” were the strategies most frequently used by Síoфра to re-engage with Freddy. While “*non-verbal imitation*” had become Sunita’s most preferred means of repairing interactions with Freddy. Freddy’s protesting behaviours had reduced to 3% (none were verbal) of his interactive communication with Síoфра although they had increased to 11% with Sunita. Video analysis revealed that almost all of Freddy’s “protests” occurred each time Sunita tried to take her turn tracing the outline of his watch as he did not want to share. Seventy-six percent of Síoфра’s and 52% of Sunita’s actions and utterances were “facilitative” following Freddy’s “*protest/refusal*” behaviours, both adults used “*follow child’s lead*” strategy most frequently when Freddy protested (Appendix 35, blue).

Pupil Utterances

Freddy’s utterances increased 10-fold with both adults during the post PD sessions (Síoфра, n.149; Sunita, n.22). Appendix 38b outlines the length, role and function of Freddy’s utterances with both adults. He relied mainly on 1 word utterances when interacting with his teacher while vocalisations were his main verbal communication with his SNA. Video analysis revealed that Freddy used vocalisations to begin and maintain a number of vocal imitation routines; Freddy vocalised and Sunita imitated, or Sunita

vocalised and Freddy imitated (see vignette 26a below). He used more 3+ word than 2-word utterances when interacting with the adults. However, they were mainly requesting a social routine e.g. “*ready steady go/ready steady press*”. His verbal initiations had increased considerably with both adults; he now used his speech to initiate communication more often than to respond with his teacher (Appendix 36, blue). The majority of his utterances were used to socially interact with both adults in particular to “*request social routine*” or to “*imitate*” what the adults said. Thirty of Freddy’s utterances with Síoфра were for joint attention (JA) purposes, 14 to give/clarify information and 16 were commenting on what the teacher was doing; only 2 of his utterances with Sunita were for JA purposes.

Impact of adult communication on pupil utterances.

Appendix 37b outlines the impact of the adults’ communication on Freddy’s subsequent speech. Sixty-four percent of his utterances with both adults followed their use of “*facilitative*” communication. “*Linguistic mapping*” was Síoфра’s most frequently used strategy only 21% of such utterances were followed by speech while 30% of her 2nd most frequently used strategy “*follow the child lead*” was followed by speech. “*Waiting*” was Síoфра’s third most frequently used communication strategy. However, only 14% of her waiting episodes were followed by speech from Freddy. Síoфра’s use of “*verbal prompts*” was more successful in supporting Freddy’s use of speech than any of her communication strategies as 45% of them were followed by speech. Interestingly, all four of Síoфра’s eliciting utterances were followed by speech from Freddy suggesting the need to use them more often. When Freddy’s 3 sessions with his teacher were analysed separately an interesting finding emerged; even though he spent less time during the 3rd interaction session (activities included a pop-gun and ball, a popper toy, spaghetti string, bubbles and a hopping frog) interacting with Síoфра, he spoke and initiated more frequently during that session (Appendix 30, blue). Further analysis indicated that Síoфра used the strategies of “*follow the child’s lead*” and “*linguistic mapping*” most often during that session and that 23 of Freddy’s utterances followed her use of “*follow the child’s lead*” strategy while 10 others followed her use “*linguistic mapping*” during this session. This finding suggests that Freddy’s use of language was best supported when the teacher followed his lead.

Section Two Pupil Initiated Interactions

The Nature of Spontaneous Social Interactions Initiated by Freddy

During the pre-PD one-to-one interaction sessions Freddy spontaneously initiated with his teacher and SNA on 47 and 7 occasions respectively (Appendix 23 for definition). Only 30 and 5 of his spontaneous initiations began a “social” interaction with Síofra and Sunita respectively. On 17 occasions, a social interaction did not develop with his teacher because she followed 12 of his initiations with her own initiation that did not relate to Freddy’s topic and on the 5 other occasions she followed his initiations with “directive” communication (Appendix 23 for definitions). Sunita was observed to follow Freddy’s spontaneous initiations with “directive” communication, on 2 occasions; she blocked his hand as he reached for a motivating item, thus halting each of his initiated interactions.

The episodes of social interaction during the initial one-to-one sessions were of varying lengths (see Table 26.5 below). However, the majority of the interactions with both adults ended after one turn (i.e. Freddy initiated and the adult responded). They terminated with Síofra because either Freddy became “non-interactive” immediately following his initiation (12 occasions), or Síofra used “directive” communication (6 occasions). All three of the one-turn interactions between Sunita and Freddy terminated because Freddy became “non-interactive”. Of the 12 interactions that continued beyond one-turn, 7 terminated because the teacher used “directive” communication and 5 terminated because Freddy “ignored” Síofra’s communication. Both interactions between Sunita and Freddy that continued for longer than 1-turn terminated because, Sunita used “directives”. The longest interaction arising from Freddy’s spontaneous initiations with Síofra continued for 11 turns (Vignette 26a below), while with Sunita it lasted 5 turns (Vignette 26b).

Table 26.5: No. of Spontaneous Initiations and No. of Turns within Subsequent Interactions

No. of Turns following Freddy's Spontaneous Initiations	No. of Spontaneous Initiations By Freddy Pre		No. of Spontaneous Initiations By Freddy Post	
	Síofra	Sunita	Síofra	Sunita
0	17	2	11	4
1	18	3	11	5
2	4	0	9	1
3	4	1	13	2
4	2	0	3	1
5	0	1	6	0
6	1	0	1	3
7+	1	0	12	3
	30/47	5/7	55/66	15/19

Vignette 26a

Longest Interaction Spontaneously Initiated by Freddy with Síofra Pre-PD Sessions

Síofra had her hands on her knees while the music played, Freddy initiated by pushing his hands into hers (I). The teacher followed his lead and took them moving them up and down (R). Freddy followed her lead (R). She then did actions to the music with his hands (R) Freddy gave her eye contact (R) and followed her (R) lead. Síofra then took her hands away to model an action to the song (I) but Freddy put his hands back into her hands (I). She followed his lead (R) and he gave her eye contact (R). Síofra took her hands away to model an action (I) but Freddy put his hands back into her hands (I). The teacher followed his lead (R) and he did the actions with her (R). The teacher took her hands away once more to model (I) but Freddy moved his hands back into hers (I) singing “clap clap”(I). The teacher followed his lead (R) Freddy gave her eye contact (R). She took her hands away and modelled clapping (I), Freddy imitated her (R). He then ignored what she did for the next eleven seconds as he looked towards the CD player (NI)

*I-R/R-R/R-I/I-R/R-I/I-R/R-I/II-R/R-I/R-NI (11 turns: Freddy, 4*initiations- 6 responses; Síofra, 1* initiation -5 responses).*

** Note only initiations followed by a response are considered a “completed initiation” within the interaction.). (see Methodology chapter for greater detail on how duration of interactions was measured).*

Vignette 26b Longest Interaction Spontaneously Initiated by Freddy with Sunita Pre-PD Session.

Freddy requested help from Sunita by placing his hand on hers (I). Sunita put the playdoh into the mincer machine (R). Freddy watched what she did (R). She said “Where is it gone, is it coming out I wonder” (I)? Freddy looked to see if the play-dough was coming out (R). Sunita pressed on the handle of the mincer (I). Freddy watched her (R). Sunita opened the machine and said “Oh no, it’s not working” (I). Freddy watched as she did this (R). She then commanded Freddy to use the rolling pin “Do this one Freddy, do this one” as she gave him the rolling pin and removed the mincing machine (BD).

I-R/R-I/R-I/R-I/R- BD (5 turns: Freddy, 1 initiation 4 responses; Sunita, 3* initiations response)*

** Note only initiations followed by a response are considered a “completed initiation” within the interaction.*

During the post PD sessions, the incidences of Freddy’s spontaneous initiations increased considerably with both adults (Síofra, n. 66; Sunita, n. 19) and 55 and 15 respectively began a social interaction. 9 of the 11 did not develop into a social interaction between Freddy and his teacher because Síofra immediately responded with “directive” communication and on the other 2 occasions Freddy immediately became non-interactive after his spontaneous initiation. Sunita followed 3 of Freddy’s initiations with “directive communication” and on the other occasion Freddy “ignored” her. The length of the interactions had increased with the majority lasting 3-turns or more with both adults (see Table 26.5 above). Twenty-two percent (n.12) of the interactions between Freddy and Síofra were now 7-turns or more. The episodes of interaction terminated mainly because the adults used “directive” communication (Síofra, n.20; Sunita, n.4) or changed the topic (Síofra, n.11; Sunita, n.5). The longest interaction episode during the follow-up one-to-one sessions lasted for 29 turns with his teacher (Vignette, 26c below) and continued for 17 turns with Sunita (Vignette, 26d below).

Vignette 26c

Longest Interaction Spontaneously Initiated by Freddy with Síoфра Post-PD

During the follow-up interactions the following occurred.

Síoфра had a can of spaghetti string and had sprayed the number two on the wall and linguistically mapped it as Freddy looked on.

Then Freddy labelled both numbers on the wall “One, two” (I). Síoфра imitated his words (R) but the number two fell off the wall and she rewrote it (R). Freddy labelled “Two” when she finished (I). He then asked for “Three” (I) and Síoфра repeated the number (R) and wrote it (R). Freddy watched as she wrote (R). He then asked for “Four” (I) and she wrote it (R) and he watched her (R). However, it fell off the wall, Síoфра said “Uh, oh” (I) and waited (I). Freddy asked for “Four” again (I). She wrote it (R) and he waited and watched (R). Síoфра waited (R) and he said “Five” (I) and she wrote it (R) and he watched (R). When she was finished writing he said “Six” (I) and she wrote it (R). He looked as she wrote (R) and then asked for “Seven” (I) and she wrote it (R) and he watched (R). She waited (R) and he turned towards her (I). He then asked for “Eight” (I) and she wrote it (R) and he watched and waited (R). Freddy asked for “Nine” (I), Síoфра said “Uh oh, I have to go over here” (I) (as the wall was full of numbers) and she moved to the wall behind where they were seated (I). Freddy imitated “uh oh” (R) and tracked her as she moved (R). Síoфра then said “Nine” (I), Freddy gave her eye contact (R) and repeated “Nine” (R). She wrote it on the wall (R), Freddy (R) watched. She said “ooops” as the spaghetti string flew up the wall (I). Freddy asked for “Ten” (I), she repeated the number (R) and wrote it (R). Síoфра waited (R), Freddy gave her eye contact (R) and said “eighteen, ninenine, twenty” (I). Síoфра recast saying “eleven” (R), Freddy repeated “eleven” (R) as he watched her write it (R). Síoфра waited (R) Freddy said “Twenty-two” (I) and looked at Síoфра (I) she recast to “Twelve” (R) and tried to write it (R). Freddy repeated twelve (R) and watched (R) but it fell off the wall. Síoфра said “Oh it doesn’t stick” (I). Freddy watched (R). Síoфра said “we have to change” (I) and she changed the activity.

I-RR/II-RR/RI-R/R-II/I-R/R-I-R/RI-R/RI-R/R-II-R/RI-II/RR-I/RR-R/R-I/I-RRR/RI-R/RR-R/II-RR/RR-I/R-Teacher switched activity (29 turns: Freddy 11 initiations, 14 responses; Síoфра, 3* initiations, 15 responses)*

** Note only initiations followed by a response are considered a “completed initiation” within the interaction.*

Vignette: 26d

Longest Interaction Spontaneously Initiated by Freddy with Sunita Post-PD

Freddy begins an imitation game

Freddy gave Sunita eye contact (I) as he placed his hand over his mouth (I) and made a vocalisation (I). Sunita imitated both the action and utterance (RR). Freddy looked as she imitated (R). He then covered his nose with his hand (I). Sunita followed suit (R). Freddy put his thumb on his nose and rotated his hand (I), Sunita imitated (R). Freddy gave her eye contact (R). Sunita waited (R). Freddy waved his hand in front of his face (I) Sunita imitated (R). He brought his two hands together in front of his body (I) while he gave Sunita eye contact (I). Sunita copied his action (R). He vocalised (I). Sunita imitated (R). He made another action using both hands (I) Sunita copied (R). He gently slapped his mouth with an open hand (I), Sunita copied (R). He slapped his mouth with alternating hands (R) Sunita copied him (R). He placed his hand on his head (I), Sunita imitated (R). He kept his hand in his head and placed his other hand in his mouth (I). Sunita copied him (R). He gave Sunita eye contact (R) and waited (R). Sunita vocalised (I), Freddy imitated her (R). Sunita imitated him (R). Freddy touched his forehead with an open palm (I). Sunita imitated (R) and immediately switched the activity.

III-RR/ RI-R/I-R/R-R/I-R/II-R/I-R/I-R/I-R/I-R/RR-I/R-R/I-R- Switched activity (17 turns: Freddy 12 initiations 4 responses; Sunita 1* initiation 14 responses)*

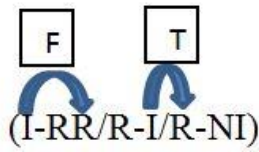
*** Note only initiations followed by a response are considered a “completed initiation” within the interaction.*

Both adults had developed the skills to build on Freddy’s initiations as indicated by the increased frequency in interaction episodes during the post PD one-to-one sessions. The adults also showed the ability to maintain Freddy’s interest in interacting with them for longer periods. However, the findings show that episodes of social interaction terminated during the post PD sessions mainly because the adults became “directive” in their communication, suggesting a need for the adults to continue to build on their ability to maintain the interactions using “facilitative” actions and utterances.

Reciprocity within the interactions.

Evidence was sought for communicative balance (reciprocity) within the child-initiated interactions of 2-turns or more. Reciprocity was measured by rate of “complete initiations” achieved by each communicative partner during each interaction. For this study a “complete initiation” was defined as “an initiations followed by a response from the other participant”. Table 26.6 below outlines the findings on the reciprocity within the interactions during the post PD interaction sessions.

Twelve of Freddy’s initiated interactions with Síofra continued for 2 turns or more during the pre PD sessions (Table 26.5 above). Analysis revealed that Freddy dominated 11 of the 12 interactions as he had more complete initiations than Síofra. On the other occasion (a 3-turn interaction) a balance of turns was observed as both he and Síofra initiated once.



F= Freddy; T= Teacher

Fig 26.1
Turns within a Pupil Initiated Interaction

Only two of Freddy’s spontaneous initiations during his pre PD session with Sunita were longer than two turns. Sunita led the longer interaction (5 turns), as she had 3 “complete initiations” and only responded once while Freddy had 1 “complete initiation” and responded 4 times (Vignette 26b above). On the other occasion Freddy led the interaction (with 1 completed initiation) that continued three turns with her (I-RR/R-R/I-BD). During the longest interaction between Síofra and Freddy (11 turns- Vignette, 26a above), Freddy had 4 “complete initiations” and Síofra had only 1.

Table 26.6 below reports the evidence of reciprocity within pupil initiated post PD interactions. Freddy continued to lead the majority of the interactions initiated by him. He led 36 of the 44 interactions that had a minimum of 2-turns with his teacher. He also led during 8 of the 10 interactions that continued for 2+ turns with Sunita following his

initiations. Analysis of the longest cycle of interaction between Síoфра and Freddy (29 turns) highlighted that he initiated and led 11 times while Síoфра only initiated on three occasions (Vignette 26c above). He initiated 12 times during the longest interaction (17 turns) with Sunita who only led once (Vignette 26d). However, there was evidence to suggest that reciprocity was beginning to develop within the interactions as 8 of the interactions with Síoфра (2-2turn, 3-3turn, 1-5turn, 1-6turn and 1-7turn interactions) and 2 with Sunita were observed to be balanced (1-4turn and 1-6turn). The findings from this case indicate that, to prolong the interactions initiated by Freddy both adults allowed him to control them.

Table 26.6: Reciprocity within the Pupil Initiated Interaction Cycles Post-PD

Turns	Leads the Interaction Freddy -Síoфра				Leads the Interaction Freddy-Sunita			
	Number of Interactions	Freddy	Síoфра	Balanced	Number of Interactions	Freddy	Sunita	Balanced
2	9	7	0	2	1	1	0	0
3	13	10	0	3	2	2	0	0
4	3	3	0	0	1	0	0	1
5	6	5	0	1	0	0	0	0
6	1	0	0	1	3	2	0	1
7+	12	11	0	1	3	3	0	0
Total	44	36	0	8	10	8	0	2

Positive Shared Affect

During the pre PD sessions with Síoфра, Freddy protested nonverbally on 27 occasions (Appendix 38, blue) by pushing the teacher's hand away, pulling items from the teacher's hands or orienting his body away from her. He shouted "no" once when she tried to remove a spoon from his hand. However, he attended unprompted to what she did on 63 occasions, laughed on 2 occasions and gave her eye contact on 33 occasions (duration; 53 seconds). When the interaction sessions were analysed separately it was found that his laughter and eye contact only occurred during the songs/rhymes session, and that he also protested least often (n.4) during that particular session. These findings suggest that the nature of the activity had an impact on Freddy's expression of positive emotion. Freddy protested on 11 occasions was not heard to laugh or give eye contact

during his session with Sunita, although he looked at what she did unprompted on 35 occasions.

During the post PD sessions Freddy's protests with Síofra had decreased to 17 incidences (all were nonverbal). He was heard to laugh or sing vocalisations tinged with laughter on 9 occasions. Freddy only gave Síofra eye contact on 7 occasions (duration 15.6 seconds), on 1 occasion his eye contact co-occurred with laughter and two occasions he smiled while giving eye contact. However, the frequency with which he looked unprompted to what she was doing had increased to 167 incidences. Freddy gave Sunita eye contact on 16 occasions (duration, 31.9 seconds) and he looked at what she did on 39 occasions. However, he protested on 21 occasions (2 were verbal) (Appendix 37, blue). Video analysis revealed that Freddy really did not want to share the ruler and watch he was using for tracing with the SNA.

Summary

The adults in this case dominated the interactions both before and following their involvement in the PD. However the adult to child communication ratio decreased during the follow up interactions as the pupil's rate of communication increased considerably. Both adults used predominately non-directive communication during the interactions. However, almost 40% was directive in nature with both of them using considerably more "behaviour directives" than "communication cues". The SNA-pupil dyad spend just over half their pre PD interaction session in positive shared engagement, with only 37% of the teacher-pupil dyad on average spent interacting positively together. While Freddy spontaneously initiated at least once a minute with his teacher the subsequent interactions were very brief with the majority lasting just one turn (an initiation and a response). Freddy rarely spoke during the pre PD interactions sessions with both adults

The adults' use of non-directive communication had increased considerably following their participation in the PD. However, the SNA continued to use high rates of "behaviour directives" when using a directive style of communication. The teacher-pupil doubled the time they spent in positive shared engagement, while there was a small increase in the duration of positive interaction between the SNA and Freddy. There as a considerable increase in the pupil's language use with both adults. The use of *"follow*

child's lead" and "*verbal prompts*" were the most effective strategies in supporting the pupil's use of speech. His initiations also increased, his verbal initiations increased 10-fold with each adult. The duration of pupil initiated interactions increased in length, particularly with his teacher. However, Freddy was observed to lead the majority of these interactions.

The context of the interaction was seen to impact on the duration of positive shared engagement. The duration was higher during pre and post PD interaction sessions when the adults used CA. However the pupil's interest in interacting with the adult decreased the more familiar he became with the resource used in the sessions.

Appendix 27: Case Study Windyvale

The Case Participants: The Classroom Adults

Yana, (teacher) was in her late thirties and had a Post Graduate Diploma in Education, and a master's in psychology. She had fourteen years teaching experience two of which were in the autism class. During the first year in the autism class she had attended some short courses pertaining to ASD; TEACCH course, (5 days), PECS (2 day) and ABA (5 day). The year before joining the study she had completed the Graduate Certificate in the Education of Pupils on the Autism Spectrum (level 9). She had taught Elana (the participant student) for 18 months prior to participating in the PD. (Table 27.1).

Kim the SNA was in her late-forties. She had a childcare level 6 qualification. She had seven years' experience working as a SNA and spent the previous two years working in Yana's classroom. Kim was studying for a degree in Childhood and Youth Studies when she became a participant in the research. She reported that she had no training in autism "*because SNAs are not allowed to attend the courses the teacher attends*" (Pre-PD Interview). However, she did have experience of special educational needs as her son had Cerebral Palsy.

Table 27.1

Demographic Information of Classroom Adults

Windyvale			
		Teacher	SNA
Name		Yana	Kim
Age		35+ years	45+ years
Highest Qualification		M-Sc (psychology)	FETAC Level 6
Experience		14 years	7 years
Experience ASD		2 years	2 years
Autism PD		GCEAS & a number of short courses	None

The Case Participants: Pupil

Elana received her diagnosis of "classic childhood autism" at the age of four and it was reported that her level of cognitive functioning could not be ascertained at that time. Elana attended a mainstream playschool for a year with the support of a child care worker prior to enrolling in the autism specific class in Windyvale School when she was 5 years 2 months. A speech and language therapist supported the class once a fortnight withdrawing

Elana for approximately half an hour at each visit. A teacher (with no autism specific training) also supported Elana for an hour after school three times a week prior to and for the duration of the study. Elana was 6 years 2 months when she joined the study and 7 years 2 months when the follow-up information was collected.

When asked about Elana's communication during the pre-PD interview, Yana replied "*she can actually communicate verbally, she doesn't use PECs but while she has language, her use of it would be poor for her age, she can request and she can make her feelings known **very strenuously** (emphasis by teacher) if it is something she doesn't want to do... she can speak lots but she needs to speak better, it is often rambling or nonsensical kind of noise.* Kim concurred stating "*I know Elana has speech, but she doesn't use it, well she uses it but usually when she wants something or is cross about something*". Both adults reported that Elana had no interest in her peers and could not name any of them. The adults also believed that the other five students in the class were much easier to teach.

The pre-PD PEP-3 (Table 27.2 below) assessment did not reflect her teacher's description of her language abilities as her expressive and receptive language abilities were less than that of a 21-month neurotypical child. Her ability in social reciprocity was assessed as being in the severe range.

The post-PD PEP-3 assessment indicated that Elana had made greater improvement in her receptive than in her expressive language skills. There was a considerable improvement in her reciprocity abilities.

Table 27.2*Pupil Age, Nature of SEN and PEP-3 Assessment Results*

Windyvale						
Name	Elana					
Age	6 years 2 months at beginning of study					
No. of years in school	1 ½ years					
Nature of SEN	Classic Childhood Autism					
	Pre PD			Post P		
PEP-3 Results	Developmental Level	Percentile Rank	Age Equivalent	Developmental Level	Percentile Rank	Age Equivalent
Expressive Language	Severe	7%	21 months	Severe	13%	18 months
Receptive Language	Severe	16%	21 months	Moderate	35%	23 months
Social Reciprocity	Severe	7%		Moderate	50%	

Section 1 Interactions Prior to the Professional Development Initiative

Context and Duration of Positive Shared Engagement

Table 27.3 below gives a brief description of the context of the pre-PD 1:1 interaction sessions and the percentage of time the dyads spent in positive shared engagement. On average 33% of the three, pre-PD teacher-pupil interactions sessions were spent in positive shared engagement while Kim and Elana spent 36% of their session positively engaged. Sixty-six percent of the actions and utterances used by Elana with Yana were interactive; (18%, initiations & 48%, responses) while 72% were interactive with Kim (22%, initiations; & 50% responses) (Appendix 30, green).

Yana had two “Academic Activities” (AA) and one “Co-operative Activities” (CA) sessions with Elana. The dyad spent more time in positive shared engagement during the “Shopping” session (CA) than they did during either of the other two sessions (Table 27.3 below). Elana protested considerably less often during that session also. Yana used directive communication least often during that session. Furthermore, she used “behaviour directives least frequently during that session compared to the two Academic Activities sessions (Appendix 32). Video analysis showed during the shopping session Elana was free to move around the room with her shopping basket and to approach the teacher whenever she liked, whereas during the AA sessions, Yana and Elana sat at a rectangular desk with Elana sitting on the inside against a wall. Kim brought a “SA” to her

session; 12 six-sided jig-saw blocks and Elana spent most of the session trying to play with the blocks on her own.

Table 27.3

Context, Resources & Percentage of Session Spent in Positive Shared Engagement

Windyvale Pre PD			
	Interaction Context	Resources	Percentage of Session in Positive Shared Engagement
Yana and Elana	Session 1 Academic Activities (AA)	Classification Activity: “What goes with what?” Pram and... ? 50 black & white pictures spread on the desk	21%
	Session 2 Academic Activities (AA)	Labelling Activity: Label and colour “matching pairs” on a worksheet	23%
	Session 3 Co-operative Activities (CA)	Shopping Activity: Teacher acted as the shopkeeper–pupil could walk around	55%
Kim and Elana	Session 1 Solitary Activities (SA)	Six-sided jig-saw blocks	36%

Adults’ Style of Communication and Student’s Subsequent Engagement

Appendix 31 (green) outlines the communication strategies and the frequency they were used by adults during the interactions. Yana (teacher) and Kim (SNA) communicated with Elana at a rate of 18.5 and 23.8 actions and utterances respectively per minute. Elana communicated at a quite high rate of 11.6 (teacher) and 17.8 (SNA). The adults were observed to be predominantly “directive” in their communication (Yana, 63%; Kim, 55%), both using mainly “behaviour directives” (Yana, 43%; Kim, 40%). *Behaviour control*, *Nonverbal commands* and *Test questions* were the most frequently used teacher directives, while Kim used *Behaviour control*, *Verbal commands* and *Yes/no questions*. A sequential analysis (Appendix 33, green) indicated that Elana only complied with 46% and 21% of Yana and Kim’s directive communication respectively. She followed 35 % of Kim’s directive communication with “*ignoring*” behaviours and 35% with “*protests/refusals*.” Interestingly, she ignored rather than protested when Yana used directive actions and utterances. Elana ignored the adults’ use of “communication cues” more than their behaviour directives. Eighteen percent and 39% of Elana’s interactive

communication with her teacher and SNA respectively were protests. More than half of Elana's protests followed the adults use of "directive" communication, suggesting that Elana did not like being told what to do or say.

When Yana's interaction sessions were analysed separately, 43% of her communication during the "Shopping" session was "directive" compared to 72% during the "What goes with what" and 78% of the "Labelling" session. Furthermore she used "behaviour directives" least frequently (n.55) during the shopping session. Elana complied with 50% of Yana's "directives" during the "Shopping" session compared to 33% during the "What goes with what" activity and 28% during the "Labelling" session. Furthermore, Elana only protested on 4 occasions during the shopping session. These findings suggest that the nature of the activity influenced both Yana's communication style and Elana's willingness to comply with her directives.

Only 13% of Yana's and 31% of Kim's pre-PD communication was observed to be "facilitative", Yana only used one facilitative strategy with any real frequency i.e. "*social comments*" (r.1.1 per minute), while Kim used four different facilitative strategies at least once a minute. "*Wait*" was the only eliciting strategy used by the adults with any frequency (Appendix 31, green).

Repairing interaction breakdowns.

A sequential analysis identified that, 55% of Yana's and 64% of Kim's communication that followed Elana's "ignoring behaviours" was "directive" actions and utterances (Appendix 34, green). Yana used a range of "behaviour directives" (n.58) when attempting to re-engage with Elana. However, "*waiting*" (n.53) for Elana to return to the interaction was her most frequently used strategy. Kim used "communication cues" mainly in an effort to repair their interaction, in particular, "*yes/no*" questions. Yana's communication was observed to be highly "directive" communication (76%) immediately following Elana's "protesting" behaviours using "*behaviour control*" utterances most frequently. However, Kim used both "directive" (43%) and "facilitative" (37%) communication when Elana protested/ refused (Appendix 35, green).

Pupil Utterances

Appendices 36 green and 39c inform this section as they report the frequency, nature, role and function of Elana's utterances with her classroom adults. During the

sessions with Yana, Elana was heard to speak on 135 occasions. However, 20 utterances were not directed at the teacher. She used mainly one and two word utterances with 14% of her interactive utterances 3 words or more. The majority of her interactive utterances were for “behaviour regulation”, 20% for “joint attention and 14% for “social interaction purposes”. Four of Elana’s vocalisations were screams of protest, 13 were moans/cries/screams while “ignoring” the teacher, and 4 were vocalisations into the teacher’s face to “seek attention”. Twenty-four percent of Elana’s utterances were initiations. The context of the interaction was found to influence Elana’s used of speech. She spoke with much greater frequency and she also used longer utterances more often during the CA session. Her longest utterance was “May I have the sauce please”. The majority of her utterances during that session were for “social interaction” purposes (Appendix 36, green). Furthermore, she didn’t cry during that session.

Elana spoke on 80 occasions during her interaction session with Kim, using a range of one two and three word utterances and 18 vocalisations. Ninety-one percent of her interactive utterances were for “behaviour regulation” purposes, only five were compliance utterances, 34 were protests and 25 were to request an action (on 13 occasions she requested to lie down). Elana never used her speech to socially interact with Kim although 6 of her utterances were for “joint attention” purposes (see Appendix 39c). Thirty-five percent of Elana’s utterances during her session with Kim were initiations and she mainly used longer utterances when she initiated. Analysis of Elana’s 18 vocalisations indicated that 12 were screams of protest in response to what Kim did or said, and 6 were crying or screaming incidences while ignoring Kim.

Impact of adult communication on pupil utterances.

A sequential analysis of the impact of the adults’ communication on Elana’s speech (Appendix 37c) highlighted that the majority of Elana’s utterances followed the adults’ use of “directive” communication (Yana, 63%; Kim, 60%), mainly following the adults’ use of “behaviour directives”. She spoke most often when Yana used “*nonverbal commands*” and when Kim used “*commands*”. However, the majority of those utterances were protests. Despite the adults’ use of directive communication at high rates, only 24% and 42% of Yana’s and Kim’s “directive” actions and utterances respectively were followed by speech from her.

Thirteen percent of Yana's and 32% of Kim's verbal and nonverbal communication were "facilitative". Only 11% of Elana's utterances followed her teacher's use of facilitative communication. The main function of Elana's subsequent speech was to socially interact. Twenty-two percent of Elana's utterances followed Kim's use of facilitative communication (Appendix 36c). However, almost all of her subsequent utterances were for "behaviour regulation" purposes, mainly to request to lie on the floor or to protest. This latter finding indicates how fraught the session was, Elana clearly did not want to socially interact with Kim. Twenty-four percent and 14% of Elana's and Kim's communication respectively sought to "elicit" communication from their pupil. Interestingly, the adults' use of eliciting utterances were their most successful communication style overall for supporting Elana's use of speech as 43% of Yana's and all four of Kim's eliciting questions were answered by Elana.

Section 1 Interactions Post Professional Development Initiative

Context and Duration of Positive Shared Engagement

The teacher used two Co-operative Activities (CA) and one (SA) during the post-PD sessions, while a CA was used by Kim (Table 27.4 below). There was a significant increase in the duration the dyads spent in positive shared engagement (Yana & Elana, avg. 78%; Kim & Elana, 81%). The time spent in positive shared engagement was less during the SA session. The context of the interaction (SA) may have influenced the outcome. The teacher had brought two sheets of paper to paint on a paint palette to share and two sponges to the session. Video analysis revealed that Elana enjoyed painting, ignoring the teachers' efforts to engage with her.

Table 27.4

Post-PD Interaction Context, Resources & Percentage of Session Spent in Positive Shared Engagement

Windyvale Post PD			
	Interaction Context	Resources	% of Session in Positive Shared Engagement
Yana & Elana	Session 1 Co-operative Activities (CA)	Two canisters of bubbles, sealed tub of bubble accessories, bubble camera and bubble dish	91%
	Session 2 Solitary Activities (SA)	2 large sheets of paper, tray of six different coloured paint and two large circular paint sponges	64%
	Session 3 Co-operative Activities (CA)	Canister of bubbles, bubble wands, bubble dish and canister of shaving foam	80%
Kim & Elana	Session 1 Co-operative Activities (CA)	Canister of bubbles, bubble wands and bubble dish	81%

Adults' Style of Communication and Student's Subsequent Engagement

Yana increased her rate of verbal and nonverbal communication during the post-PD interactions while Kim continued to communicate at almost the same rate (Yana, $r.21.0$; Kim, 23.4 per minute) (Appendix 31, green). Elana's rate of communication had also increased with both adults (Appendix 38, green). The adult-pupil dyads communicated at almost the same rates.

Appendix 31 (green) reports the adults' style of communication and strategy use. Both adults had reduced their use of "directive" actions and utterances considerably in particular their use of "behaviour directives". However, they continued to use "yes/no" questions (a communication cue strategy) at least once a minute. Their communication was observed to be predominately "facilitative" in nature (Yana, 59%; Kim 64%). Yana had almost tripled her use of "facilitative" utterances and her use of facilitative actions increased 11-fold. The facilitative strategies used most frequently by both adults included "*linguistic mapping*", "*follow child's lead*", "*self-talk*" and "*acting silly/exaggeration*". Yana also used "*switched activity*" and Kim used nonverbal "*imitation*" at least once a minute to maintain their interactions with Elana. Both adults also increased their use of "eliciting" communication with both adults using the strategy "*show*" most frequently.

Eighty-seven percent of Elana's actions and utterances with both adults were "interactive" during the post-PD sessions. Her initiations (verbal and nonverbal) had increased with both adults, more than doubling with her teacher (Appendix 30, green). The incidences of "*ignoring*" behaviours by Elana had more than halved and her "*protest/refusal*" behaviours had also decreased considerably with the adults (Appendix 38, green). Analysis of each of Yana's sessions separately highlighted that Elana, was least interactive during the painting session (Table, 27.4 above). Video analysis revealed that she ignored her teacher's communication as she mixed and the explored the paints with her fingers. A possible explanation for greater "non-interactive" behaviour during this session maybe that the paints were readily available to Elana whereas during the bubble session she had to access the bubbles through Yana and she needed help with opening the canister and sometimes to blow the bubbles, she also required Yana's help to press the nozzle of the shaving foam can during the other session.

Repairing interaction breakdowns.

Yana mainly used a range of "facilitative" actions and utterances while endeavouring to repair the interactions following Elana's "ignoring" or "protest/refusal" behaviours during the post-PD interaction sessions. However, "*waiting*" was the most frequent strategy that followed Elana's "ignoring" behaviours while Yana used "*follow child's lead*" most frequently when Elana protested or refused. Kim used nondirective communication mainly following Elana's "ignoring" behaviours and all of Elana "protest/refusal" behaviours were followed by nondirective communication from Kim (Appendices 34; 35, green).

Pupil Utterances

The nature of Elana speech is reported in Appendices 36 (green) and 39c. The frequency of Elana's utterances increased very slightly to 143 utterances with Yana and decreased considerably with Kim during the post-PD interaction sessions (Appendix 36, green). Video analysis offers an explanation for the latter finding. During the pre-PD session Elana was highly motivated to speak in order to have her needs met. The resource (a set of blocks) used during that session was highly motivating for her (her teacher mentioned her blocks on 28 occasions during the initial interview). She normally played alone with these blocks while lying on the floor during her "down time". During the pre-

PD session she was desperately trying to tell Kim that this is what she wanted to do during the first session.

However, a number of positive changes were observed in Elana's speech during the post-PD sessions. She used longer utterances more frequently with both adults. Both of her longest utterances were for joint attention; she used a six word utterance with Yana, "We have to find it, yellow" and an eight word utterance with Kim, "I going home. It is time to go home". All of her utterances were directed at Kim and 99% at Yana. The majority of her interactive utterances with Yana were initiations. Elana's verbal initiations had also increased with Kim. Analysis of Elana's 23 vocalisations with her teacher revealed that 17 were bouts of laughter and 6 were strings of nonsensical words. Video analysis showed that she was seeking positive attention with these strings of words as she was smiling as she uttered them into Yana face. Elana's mainly used her speech to socially interact with the adults, in particular to "*request social routine*" such as blowing and popping bubbles, squirting the shaving foam and squelching the foam/paint together with their hands. Twenty-one percent and 29% of Elana's utterances with her teacher and SNA respectively were for behaviour regulation purposes, mainly to request help or to tell the adult to do something (Appendix 39c). Only three of her utterances with her teacher and two with Kim were "*protests/refusals*". She uttered "not that one" once and "no thanks" on four occasions. Her joint attention utterances were to comment on what was happening (mainly through her laughter) and to give information.

Impact of adult communication on pupil utterances.

Appendix 37c outlines the impact of the adults' communication on Elana's subsequent speech. The majority of her utterances followed the adults' facilitative communication (Yana, 51%; Kim, 50%), while 29% and 32% followed Yana's and Kim's use of "eliciting" communication respectively. However, when the data was analysed to ascertain the frequency adult communication was immediately followed by speech. Interesting findings arose. Only 23% of Yana's "facilitative" utterances and 16% of her "facilitative" actions were followed by speech from Elana compared to 52% of her "eliciting utterances" and 36% of her "communication cues", suggesting that "facilitative speech" was not as effective in supporting Elana to use her speech as the other two styles of utterances. While Yana's use of "eliciting utterances" was quite low (n.25), the findings show that 52% were followed by speech from Elana; she responded verbally to 4

of the 7 “*choice*”, 6 of the 14 “*open-ended*” and 3 of the 4 “*seek clarification*” questions asked. Yana’s use of “communication cues” were also quite successful in supporting Elana’s use of speech, as 33% of “*yes/no questions*” and almost all of her “*verbal prompts*” were followed by speech from her. Thirty-six percent of Yana’s and 25% of Kim’s “acting silly/exaggeration” incidences were also followed by speech. “*Linguistic mapping*” was Yana’s most frequently used verbal strategy yet, only 15% of such utterances were followed by speech from Elana while 28% of Yana’s “*self-talk*” and 26% of her “*social comments*” were followed by speech. Interestingly, “*follow the child’s lead*” was the adults most frequently used strategy but only 16% were followed by speech from Elana.

Section Two Pupil Initiated Interactions

The Nature of Spontaneous Social Interactions Initiated by Freddy

Table 27.5 below, reports the nature, in terms of frequency and length of interactions that were spontaneously begun by Elana. She began an interaction with her teacher on 69 occasions during the pre-PD sessions and on 27 occasions with her SNA. Sixty-two percent of Elana’s spontaneous initiations with Yana did not develop into social interactions because on 41 occasions Yana followed her initiation with “directive” communication and on the other two occasions Elana became non-interactive before the adult could respond. Although 26 of Elana’s initiations developed into social interactions they were brief with only 4 continuing to 4 or more turns. Vignette 26.1 below describes one such social interaction. Yana halted 50% of the 26 interactions because of her use of directive communication while Elana halted the interactions by ignoring her teacher. Interestingly, when the sessions were analysed separately, the majority (n.15) of the Elana-initiated social interactions occurred “shopping” session, furthermore, 3 of longer social interactions also occurred during this session. Forty-one percent of Elana spontaneous initiations with Kim developed into a social interaction. However, they were very brief with only three of them continuing for four turns. Vignette 27.2 below is one such interaction. Sixty-two percent of Elana-initiated social interactions were terminated by Kim’s use of directive communication.

Table 27.5

No. of Spontaneous Initiations and No. of Turns within Subsequent Interactions

No. of Turns following Elana's Spontaneous Initiations	No. of Spontaneous Initiations by Elana Pre		No. of Spontaneous Initiations by Elana Post	
	Yana	Kim	Yana	Kim
0	43	16	5	3
1	10	6	12	4
2	6	1	15	3
3	6	1	10	5
4	4	3	6	0
5	0	0	7	1
6	0	0	4	0
7+	0	0	14	7
	26/69	11/27	68/73	20/23

Vignette 27a

Longest Interaction Spontaneously Initiated by Elana with Yana Pre-PD

During the “What goes with what” activity session, Elana had a picture of hair and she needed to find a brush. Both Yana and Elana were looking at the range of pictures on the table, then...

Elana picked up a picture (I) and labelled it “knife” (I). Yana agreed “yes it is a knife” (R). Then Elana said “no” (I) putting the picture down (I). Yana agreed “No, a knife doesn’t brush your hair sure it doesn’t” (R). Elana said “too big” (R). Yana agreed “Yeah a knife is too big” (R). Elana picked up another picture and looked at it ignoring what the teacher was asking and saying to her for 13 seconds. (NI).

II-R/II-R/R-R/NI (4 turns: Elana, 2* initiations- 1 response; Yana, 0 initiations 3 responses).

** Note only initiations followed by a response are considered a “completed initiation” within the interaction.*

Vignette 26b

Longest Interaction Spontaneously Initiated by Elana with Kim Pre- PD:

Elana was playing with her blocks ignoring Kim. Kim asked “What are you going to make”?

Elana shouted “I want lie down, I want lie down” (I) Kim asked “what’s wrong” (R)?

Elana responded “get down”. Kim sneaked one of Elana’s blocks away (I). Elana reached her arm towards Kim (R). Kim asked “what’s wrong” (I) Elana replied “Blocky please”.

Kim said “Say please Kim” (command).

I-R/R-I/R-I/R-command (4 turns: Elana, 1* initiation-3 responses; Yana, 2 initiations- 1 response)

** Note only initiations followed by a response are considered a “completed initiation” within the interaction.*

Elana’s spontaneous initiations had increased slightly during her post-PD interaction sessions with Yana and decreased with Kim (Table 27.5 above). However, 93% and 90% of them now developed into social interactions with her teacher and SNA respectively (Table, 27.5 above). More than half of the interactions arising from Elana’s spontaneous initiations with the adults now continued for three turns or more. The longest interaction continued for 40 turns with Yana (Vignette xxx below) and for 20 turns with Kim (vignette, xxx below). Fifty-two percent and 48% of Elana-initiated interactions terminated because of the adults’ use of “directive” communication, highlighting the need for the adults to reduce their use of directive communication even more. Separate analysis of the 3 interaction sessions between Yana and Elana revealed that Elana spontaneously initiated using speech least often (n.3) during the “painting” session and most often during the “bubble/shaving foam” session (n.18). Elana she also terminated most of the interactions (61%) during that session by “ignoring” the teacher as she occupied herself with the paints and paint sponges. Video analysis of the sessions offer possible explanations for Elana’s termination of the interactions and limited spontaneous verbal initiations during the “painting” sessions; Elana had unlimited access to the resources and did not need Yana’s help during the “painting” session, whereas during the other sessions Yana “controlled access” to the resources and Elana needed help with opening the canister of bubbles and in extracting the liquid from the shaving foam can and in making the liquid into foam.

Vignette 27c

Longest Interaction Spontaneously Initiated by Elana with Yana Post-PD

During the follow-up interactions the following occurred.

Yana pointed the bubble camera at Elana. Elana picked up the bubble canister (I) and poured bubbles into the camera (I). Yana labelled as Elana poured “pouring, pouring” (R). Elana requested “blow please” (I). Yana blew the bubbles at Elana (R) who scrunched up her face(R) and immediately reached for the tub of bubble accessories (I). Yana stopped blowing (R) and asked “Do you want this one or this one” (holding the tub and camera) (I)? Elana said “open please, open please” (R) as she looked at the tub (R). Yana agreed saying “Okay this one” (R) putting the camera away (R). Elana watched (R). Yana said “okay this one” (R) and Elana agreed “this ones” (R). Yana began to open the sealed tub saying “oh I need help” (II). Elana helped by pulling at the lid (R). Yana labelled what was happening “oh pulling, pulling” as she exaggerated her pulling (RR). Elana gave Yana eye contact (R). Yana tried to open the lid with her nails (I). Elana watched and waited (RR) Yana said “Oh my goodness what do I need to get, mmm scissors maybe” (I). Elana imitated “scissors” (R) as she watched Yana (R). Yana said “A pen will do” and prised the sellotape with the pen (II). Elana reached over to aid Yana by pulling the lid (I). Yana labelled with exaggeration “pull, heave ho” (RR). Elana repeated saying “heave ho” as she pulled (RR). Yana imitated “heave ho” as she pulled (RR). Elana said “nope” as she stopped pulling (II). Yana agreed “nope, we’ll have to get this one” as she prised more sellotape off (RI). Elana watched and waited (RR) and then pulled at the lid (I). Yana said “pulling” (R). Elana said “heave ho” (R). Yana imitated her (R) and pulled at the lid and said “heave ho” (RR). Elana stopped pulling gave Yana eye contact and said “no” (III). Yana agreed “okay, no” (R) and prised more sellotape off (I). Elana watched (R) and suggested “crayons” (I). Yana ignored her (R) and gestured for help (I). Elana pulled at the lid (R) and gave Yana eye contact (I) and said “pu, pu, pu pull” (I). Yana said “heave ho” with exaggeration (II). Elana gave Yana eye contact (R) and let go of the lid (I). Yana commented “oh this is hard” (R). Elana watched as Yana tried to open the tub (R). Yana said “Good grief” as she struggled to open the tub” (II). Elana put her hand on the lid again to help her (R). Yana stopped and let her pull (R). Elana said “heave ho” (I). Yana imitated “heave ho” pulling at the tub (RR). Elana said “heave ho” again as she pulled (RR). Yana said “heave ho”(R). Yana imitated as she pulled once more “heave ho” (RR). Elana let the tub go (I). Yana prised more sellotape off

(R). Elana watched (R). Yana almost freed the lid and said “ha, ha” with gusto (II) and she offered the tub to Elana to pull (I). Elana pulled the lid off (R). Yana said “in the tub, now what would you like” (I) as she offered the tub to Elana (I)? Elana took out the canister of bubbles (R), Yana labelled it “red bubbles” (R). Elana gave her eye contact (R), and then ignored the teacher for 5.3 seconds as she tried to open the bubbles herself.

II-R/I-R/RI-RI/RR-RR/R-R/R-II/R-RR/R-I/RR-I/RR-II/I-RR/RR-RR/II-RI/RR-I-R/R-RRR/III-RI/RI-RI/R-II-II/RI-R/R- II/ R-R/I-RR/RR-RRR/I-R/R-III/R-II/R-R/R-NI (40 turns: Elana 11 initiations, 21 response; Yana, 11* initiations, 19 responses)*

Vignette 27d

Longest Interaction Spontaneously Initiated by Elana with Kim Post-PD

Kim and Elana were sitting at a table. Kim was removing the foil from the top of the bubbles canister. Elana was ignoring her, then

Elana turned and looked at what Kim was doing (I). Kim showed her the open bubbles canister (R) exclaiming “Yeah” (R). Elana looked into the canister and then bent down to smell the bubbles (RI). Kim imitated her (R). Elana reached for the plastic storage box (I), Kim allowed her to take it (R). Elana began to take to lid off (I), Kim opened one clip (R), Elana opened the other (R) and then reached for the bubbles Kim was holding (I). Kim ignored her (R) as she removed more foil (I). Elana waited (R). Kim began to tip the bubbles into the box (I) Elana helped her (R). Kim labelled “pouring” as they poured, only pouring a tiny amount of bubbles into the box (I). Elana repeated “pouring” (R). Kim imitated saying “pouring” (R) and poured another small amount of bubbles into the box (I). Elana watched (R) and when Kim stopped pouring Elana said “pouring” (I), Kim poured more bubbles saying “pouring” (RR) as Elana watched (R). Elana blew some bubbles (I), Kim labelled “blowing” (R). Elana said “bubbles gone” and got more mixture on the wand and blew (III). Kim labelled “blowing” as Elana blew (R). Kim then burst the bubbles saying “Yeah, pop pop pop” (II). Elana caught a bubble on her wand (I). Kim opened a bag with the bubble accessories (I) Elana took two wands from the bag (R), Kim allowed her to take them and then asked “Can Kim have some” (Y/N)?

*I-RR/RI-R/I-R/I-R/RI-RI/R-I/R-RI/R-RI/RI-RR/RI-R/III-R-II/I-I/R-R -Y/N question (19 turns: Elana, 8*initiations, 8 responses; Kim, 4 initiations, 11 responses.*

Reciprocity within the interactions.

Evidence was sought for communicative balance (reciprocity) within the child initiated interactions of 2-turns or more. Reciprocity was measured by rate of “complete initiations” achieved by each communicative partner during each interaction. For this study a “complete initiation” was defined as “an initiation followed by a response from the other participant”.

During the pre-PD sessions, sixteen of Elana-initiated spontaneous interactions continued for two turns or more with Yana and on five occasions with Kim (Table 27.5 above). Elana led the majority of the interactions (she initiated more often within the interaction than the adults). Three of her pre-PD interactions with her teacher were balanced.

Table 27.6 below outlines the findings on the reciprocity within the interactions during the post-PD interaction sessions. Elana continued to dominate the social interactions she initiated with the adults during the post-PD sessions. However, there was reciprocity developing within the interactions between herself and Yana as, 11 were now observed to be balanced. The longest Elana-initiated interaction with Yana (n.40 turns) was balanced (see Vignette 27c above). When the Elana-teacher interaction sessions were analysed separately, reciprocity was most evident during the bubbles session as there seven balanced interactions during that session.

Table 27.6*Reciprocity within the Pupil Initiated Interaction Cycles Post-PD*

Turns	Leads the Interaction Elana -Yana				Leads the Interaction Elana-Kim			
	Number of Interactions	Elana	Yana	Balanced	Number of Interactions	Elana	Kim	Balanced
2	15	10	2	3	3	2	0	1
3	10	8	1	1	5	3	2	0
4	6	4	0	2	0	0	0	0
5	7	4	0	3	1	1	0	0
6	4	2	1	1	0	0	0	0
7+	14	11	2	1	7	6	0	1
Total	56	39	6	11	16	12	2	2

Shared Positive Affect

Elana protested/refused frequently during the pre-PD sessions with both adults (Appendix 38, green). She protested more frequently during the session with her SNA than she did during the three sessions with her teacher. The majority of her protests with her teachers were nonverbal and included; grabbing at items, pulling the teacher's clothing, pulling items from the teacher's hands, pushing with force against the teacher, banging the table with force, and spitting. On 13 occasions she voiced her protest/ refusal with utterances; such as "No/No, no, no/ don't want that /no more/ no thanks/ stop you stop, on 3 occasions she shouted nonsensical words into Yana's face. Elana was not heard to laugh during any of her pre-PD sessions with Yana. . During the post-PD sessions Elana protests/refusals had decreased to 25 and only three were verbal; she protested saying "not that one" when Yana squirted her playfully, and on two occasions she said "no thanks" when Yana pretended she was going to squirt her. Elana was heard to laugh during all three sessions doing so on 17 occasions overall and on 6 other occasions she uttered strings of nonsensical words tinged with laughter, on some occasions these utterances were accompanied by dancing. More than 50% of the 63 protests during the pre-PD session with Kim were verbal. She cried or screamed on 18 occasions and she was not heard to laugh. Elana's protests had decreased significantly during the post-PD sessions with Kim, no crying occurred, and she was heard to laugh on 2 occasions.

Summary

The adults from Windyvale dominated the interactions prior to their engagement in the PD. They used a predominately “directive” style of communication, mainly using “behaviour directives”. The teacher only used one while the SNA used four “facilitative” strategies with any real frequency, suggesting perhaps that the SNA was not “directive” by nature and that perhaps the teacher was influencing her interaction style.

The student communicated with high frequency using the majority of her actions and utterances for “*behaviour regulation*” purposes. On average the adult-pupil dyads spend 1/3 of their session in positive share engagement. The context was found to have considerable influence on the pre-adult-pupil interactions. The CA (Shopping) used by the teacher was the most conducive to positive interactions as more than half the session was spent in positive shared engagement. The teacher used “directive” communication less frequently; the pupil spoke more, used longer utterances and used her speech mainly for social interaction purposes during this session. Further, the pupil protested considerably less frequently during this session. The pupil also spoke with high frequency during the pre-PD session with her SNA. However, almost all of her utterances were to “*protest/refuse*” what was asked of her and to request escape from the interaction so that she could play with the activity (blocks) on her own. No laughter was heard in any of the sessions. While the pupil spontaneously initiated interactions with her classroom adults almost three times per minute, the adults halted the majority of the interactions because of their use of directive communication. They did not have the skills to prolong the interactions that did develop for very long as only a small number of such interactions lasted four turns of more.

The adults’ style of interaction had become pre dominantly non-directive following their participation in the PD. The teacher now used a range of “facilitative” actions and utterances with high frequency. “*Follow the child’s lead*” was the communicative strategy most frequently used by both adults. The student’s communication increased and used it mainly to socially interact with the adults. Her protests had decreased considerably and laughter was heard during the interactions with both adults. The adult-pupil dyads spend the vast majority of the time in positive shared engagement. Ninety percent or more of pupil-initiated interactions developed into social interactions and there was a noticeable increase in their duration. There was evidence of reciprocity developing with the teacher –

pupil social interactions. While the pupil's use of language did not increase overall, she used her speech mainly for social interaction purposes. Further, her verbal initiations and her length of utterances increased with both adults.

Appendix 28 Case Study Bridgeport

The Case Participants: The Classroom adults

Violet, the Bridgeport teacher was in her late forties. She had a Bachelor of Education degree and had been teaching for 29 years; 13 years' working in primary mainstream classes and 16 years teaching students with special educational needs (the last 3 were in the class for students on the autism spectrum). Violet had attended a 5-day TEACCH course, a 2 day PECS course, a day on the Hanen programme and a day on Social Stories prior to joining the study. She had also completed two short unaccredited online courses, "Understanding ASD" and "ABA". She had taught Keeva (the participant student) for a year prior to participating in the PD. (Table 28.1).

Heidi was in the 40-45 year age bracket and had been a SNA in the school for three years. She had 2 years' experience supporting students on the autism spectrum but had only supported Keeva for a year prior to the beginning of the study. Heidi reported that she received in-class guidance from the teacher but had no specific training in autism.

Table 28.1

Demographic Information of Classroom Adults

Bridgepost			
	Teacher		SNA
Name	Violet		Heidi
Age	45+		40+
Highest Qualification	B-Ed		FETAC Level 5
Experience	29 years		3 years
Experience ASD	3 years		2 years
Autism PD	Number of short courses		None

The Case Participants: Pupil

Keeva had received her diagnosis of autism with a significant cognitive disability when she was 36 months old. She attended an autism specific preschool prior to enrolling in Bridgeport. Keeva had just completed a year in the class for students on the autism spectrum when this study began. A speech and language professional visited the class on average once a month and withdrew Keeva from the class for approximately 20 minutes to work with her. A teacher (with no specific autism training) worked with Keeva for an hour after school on three afternoons each week prior to and for the duration of the study.

Keeva was 5 years 10 months when she joined the study and 6 years 9 months when the follow-up information was collected.

Violet (the teacher) was anxious for Keeva to be part of the study because she perceived her as the most difficult pupil to motivate in her class, *“The challenge for Keeva really is having to comply, that’s difficult for her because she is on her own agenda...she is really independent “Miss Independent” and she’ll do it for herself and whatever it takes she will do it...she doesn’t ever seek out any particular company, she doesn’t mix with the children here either. She actually prefers her own company...I think sometimes she can almost shut down in the classroom, where she is not tuned in to what is happening...she needs communication definitely...she finds it difficult to let go, she finds it difficult to accept for want of a better word she finds it difficult to accept correction ...when to let go, turn-taking, sharing, all those kind of things”* (Pre-PD Interview). When asked how Keeva communicated both adults reported that she had lots of single words but only used them when prompted. The teacher reported, *“She is inclined to communicate by gesture or sounds or she will cry if she doesn’t like something or she will say words for example she will say “No”, but mostly she will do it physically, by facial expression, by running away, by making some sounds, the odd word, that’s how she communicates. She will rarely pull you towards something; if she wants something she will go and search it out herself. She will rarely come to you looking for help. I have never experienced that with her”* (Pre-PD Interview)

The pre-PD PEP-3 (Table 28.2 below) assessment confirmed Keeva’s difficulty with receptive and expressive language abilities. Her ability in social reciprocity was assessed as being in the severe range.

The post-PD PEP-3 assessment indicated that Keeva’s language skills had improved considerable albeit she was still functioning far below her neurotypical peers. Her reciprocity skills had also improved.

Table 28.2*Pupil Age, Nature of SEN and PEP-3 Assessment Results*

	Bridgeport					
Name	Keeva					
Age	5 years 10 months at beginning of study					
No. of years in school	1 year					
Nature of SEN	Autism with Significant Cognitive Disabilities					
	Pre PD			Post P		
PEP-3 Results	Developmental Level	Percentile Rank	Age Equivalent	Developmental Level	Percentile Rank	Age Equivalent
Expressive Language	Moderate	25%	<12months	Moderate	26%	25 months
Receptive Language	Moderate	27%	19 months	Moderate	31%	24 months
Social Reciprocity	Severe	12%		Moderate	73%	

Section 1 Interactions Prior to the Professional Development Initiative

Context and Duration of Positive Shared Engagement

Table 28.3 below gives a brief description of the context of the pre-PD 1:1 interaction sessions and the percentage of time the dyads spent in positive shared engagement. On average 37% of the three pre-PD teacher-pupil interactions sessions were spent in positive shared engagement while Heidi and Keeva spent 23% of their session positively engaged. Fifty-nine percent of the actions and utterances used by Keeva with Violet were interactive; (9%, initiations and 50%, responses) while 51% were interactive with Heidi (13%, initiations; and 48% responses) (Appendix 30, red).

Violet used all three types of activities while interacting with Keeva. The dyad spent more time in positive shared engagement during the “Singing” session (CA) than they did during either of the other two sessions (Table 28.3 below). Keeva did not cry or protest during that session while she protested on 14 and 13 occasions during the “Doll” and Labelling” sessions (Appendix 41). Violet used “behaviour directives” least frequently during that session (Appendix 32). Heidi’s interaction session occurred in the sensory room and less than ¼ of that session was spent in positive shared engagement. Video analysis revealed that once Keeva accessed a resource, she became engrossed in using it and the SNA found it difficult to regain her attention.

Table 28.3

Context, Resources and Percentage of Session Spent in Positive Shared Engagement

Bridgeport Pre PD			
	Interaction Context	Resources	Percentage of Session in Positive Shared Engagement
Violet and Keeva	Session 1 Solitary Activities (SA)	A large doll and doll's items	22%
	Session 2 Co-operative Activities (CA)	Singing Songs with support from visual prompts	56%
	Session 3 Academic Activities (AA)	Labelling pictures	33%
Heidi and Keeva	Session 1 Solitary Activities (SA)	Sensory toys: rubber gloves, exercise ball, blanket, feather duster, pot scrub and trampoline	23%

Adults' Style of Communication and Student's Subsequent Engagement

Appendix 31 (red) outlines the communication strategies and the frequency they were used by adults during the interactions. The adults dominated the pre and post interactions. During the pre-PD sessions, Violet and Heidi communicated with their pupil at a rate of 16.0 and 16.3 actions and utterances respectively per minute while the rate of Keeva's interactive communication was 10.4 (teacher) and 8.7 (SNA) (Appendix 38). . The teacher was observed to be predominantly "directive" with 51% of Violet's and 42% of Heidi's actions and utterances "directive" in nature. The adults used slightly more "communication cues" than "behaviour directives" during the interactions. "*Verbal prompts*" and "*commands*" were Violet's most frequently used directives while Heidi used "*yes/no*" and "*behaviour control*". Analysis of Keeva's behaviours immediately following the adults' "directive" communication indicated that 50% and 46% were complying with Violet and Heidi respectively (Appendix 33, red). Keeva ignored or protested more often when the adults used "communication cues". Sixty-one percent of the protests used by Keeva during the pre-PD sessions immediately followed Violet's use of "behaviour directives" none followed her use of "communication cues".

Violet used only one "facilitative" strategy with any real frequency "*linguistic mapping*" while Heidi used "*linguistic mapping*" and "*follow the child's lead*" at least

once a minute. “*wait*” was the only eliciting strategy used by the adults with any frequency (Appendix 31, red).

Repairing interaction breakdowns.

A sequential analysis of the data to ascertain the style of communication used by the adults following Keeva’s “ignoring” (Appendix 34, red) and “protest/refusal” (Appendix 35, red) behaviours indicated that Violet’s subsequent communication was predominantly “directive”. Fifty-one percent of her actions and utterances following Keeva’s non-interactive behaviours and 61% following her protest/refusal behaviours were directive. Violet followed Keeva’s non-interactive behaviours with “verbal prompts” (communication cues) mainly while she followed Keeva’s “protest/refusal” behaviours most often with “commands” (behaviour directives). Violet also used the strategy of “waiting” with high frequency when Keeva “ignored” her. Heidi’s communication was predominantly “non-directive” following Keeva’s “non-interactive” behaviours, relying on “*waiting*” mainly. However, on 8 of the 14 occasions that Keeva’s protested, Heidi followed with “directive” communication.

Pupil Utterances

Appendices 36 red and 39d report the frequency, nature, role and function of Keeva’s utterances with her classroom adults. Keeva used 145 utterances; mainly 1-word utterances during the pre-PD sessions with Violet. 25 of her utterances were vocalisations of which the majority were crying bouts. The majority (63%) of her interactive utterances were for “behaviour regulation” using them mainly to comply with the teacher’s directives. Thirty-two percent of Keeva’s speech was for “social interaction” and 5% for “joint attention” purposes. Eleven percent of her utterances were initiations. When the sessions were analysed separately, a number of findings emerged. Keeva used her speech with much greater frequency, she had more verbal initiations, she used longer utterances more frequently, she didn’t cry and the majority of her utterances during the singing session were for “social interaction” purposes. Keeva communicated verbally least often, rarely initiated verbally and the majority of her utterances were for “behaviour regulation” purposes (mainly to “protest”) during the “doll” session. Video analysis showed that Keeva could access the doll and accessories independently and that she wanted to play with them by herself resisting most of Violet’s attempts to join in her play. The vast majority of Keeva’s 42 utterances with Heidi were 1-word and 68% were used for

“behaviour regulation”. Fourteen percent of her utterances were initiations (5 non-social requests and 1 request social routine). Five of Keeva’s six interactive vocalisations with Heidi (Appendix 39d) were protests (whimpering), one vocalisation was in acknowledgement of Heidi’s question.

Impact of adult communication on pupil utterances.

A sequential analysis (Appendix 37d) of the impact of the adults’ communication on Keeva’s speech highlighted that most of her utterances followed the adults’ use of “directives” (Violet, 71%; Heidi, 69%). Keeva’s utterances mainly followed Violet’s use of “*verbal prompts*” (n.55) and “*commands*” (n.36). Interestingly, Violet used 99% of her “verbal prompts” during the “Singing” session, (leaving pauses in songs) and 54 of Keeva’s 55 utterances that followed verbal prompts occurred during that session. Although Heidi used “verbal prompts” on only 6 occasions, 4 were followed by speech from Keeva. These latter two findings highlight the value of the strategy for encouraging Keeva to use her speech. Sixty-nine percent of Keeva’s utterances that followed Violet’s commands occurred during the “labelling pictures” session. However, Violet used more commands during this session (n.37) compared to the doll (n.20) and singing session (n.11). Analysis of the function of the utterances that followed Violet’s commands during the “labelling session” indicated that 72% were complying with the teacher’s command, “Say...” (Referring to a picture label), 24% were protests and 4% were “ignoring”. The majority of the utterances that followed Violet’s commands during the “doll” session were protests. The use of “*yes/no*” questions were Heidi’s most successful communication strategy during the pre-PD sessions as 52% were followed by speech from Keeva. Interestingly, Violet asked 33 “*yes/no*” questions yet only 2 were followed by speech from Keeva. Video analysis indicated that Keeva responded to Heidi because the “*yes/no*” questions were asked in the context of a game. On 10 occasions Heidi offered her a number of items that were not a glove asking in a fun manner and using slight variations of the question “Is this a glove”? Keeva responded on 8 occasions saying either “yes” or “glove”. These latter findings highlight that context must be considered as well as strategy use when supporting pupils on the AS communication and language development.

Section 1 Interactions Post Professional Development Initiative

Context and Duration of Positive Shared Engagement

Solitary Activities (SA) were used in all four post-PD interaction sessions in this case (Table, 28.7 below). The duration spent in positive shared engagement by the dyads increased (Violet and Keeva, avg. 53%; Heidi and Keeva, 74%). However, the improvement in the duration of teacher-pupil positive engagement was not as significant as achieved in the other cases, even though Violet's interaction style had become predominately facilitative (see below). Further, there was a noticeable difference between the duration the teacher-pupil and SNA-pupil spent positive shared engagement. Possible explanations for the former finding may be; SA were used in all three sessions, the nature of the SA was the same in the three interaction sessions, and two sheets of painting paper, two bowls, two spoons were brought to the sessions. Video analysis revealed that once Keeva had received her requested items, she turned all her attention to mixing in her bowl or painting on her sheet while ignoring Violet's attempts to interact with her. Heidi brought one waterwheel and one basin which may have accounted for difference in duration of positive shared engagement found in hers and the teacher's interaction sessions. Further, the activity itself lent itself to fun as water spilled and splashed as they played with it.

Table 28.4

Post-PD Interaction Context, Resources and Percentage of Session Spent in Positive Shared Engagement

Bridgeport Post PD			
	Interaction Context	Resources	% of Session in Positive Shared Engagement
Violet and Keeva	Session 1 Solitary Activities (SA)	Painting: Large sheet of paper with outline of dog for pupil and teacher. 2 paint brushes, numerous bottles of paint, coffee, mustard, water and chilli powder, bowls and spoons	53%
	Session 2 Solitary Activities (SA)	Painting: Large sheet of paper with outline of cat for pupil and teacher and resources described above	58%
	Session 3 Solitary Activities (SA)	Painting: Large sheet of paper with outline of numbers for pupil and teacher- and resources described above	47%
Heidi and Keeva	Session 1 Solitary Activities (SA)	Water play: a basin, a water wheel and different sized bottles containing different coloured water	74%

Adults' Style of Communication and Student's Subsequent Engagement

The adults increased their rate of communicative acts (Violet, 2.21.4; Heidi, 2.9 per minute) (Appendix 30, red). There was a significant increase in Keeva's rate of communication with both adults (Appendix 37, red). Heidi had become less dominant within the session with Keeva.

Appendix 30 (red) reports the adults' style of communication and strategy use. The adults' communication was predominately "facilitative" now (Violet 61%; Heidi, 65%). The frequency of Violet's "facilitative" utterances had more than doubled while her use of "facilitative" actions had increased 7-fold. "*Linguistic mapping*" and "*follow the child's lead*" were used most frequently by both adults. The adults increased their use of "eliciting" communication overall (Violet, 25%; Heidi, 23%) although the rate they used "*waiting*" had decreased. Both adults used "*deliberate ignoring*" at least once a minute and Violet also used "*control access*" at least once a minute. The adults had decreased their use of directives considerably, in particular their use of "behaviour directives". However, Violet continued to use "*yes/no questions*" (communication cue) and Heidi used "*verbal prompt*" (communication cue) at least once a minute. .

Eighty percent and 82% of Keeva's actions and utterances with her teacher and SNA respectively were now observed to be interactive. Her initiations (verbal and nonverbal) had tripled with both adults. Twenty-seven percent and 40% of her communication with Violet and Heidi respectively were initiations (Appendix 29, red). Analysis of Keeva's "ignoring" behaviours showed that the frequency of her ignoring episodes had decreased considerably with the adults (Appendix 37, red). However, the average duration of each "ignoring" episode with Violet had increased to an average of 4.5 to 6.9 seconds. Two possible explanations for this arose, from a) a sequential analysis of the Violet's communication when Keeva ignored her and b) through video exploration. The sequential analysis indicated that when Keeva became "non-interactive" during the post-PD sessions, only 17% of Violet's subsequent communication was considered "directive" ("behaviour directives" only used on 3 occasions) while 56% was "facilitative" (Appendix 33, red). "*Linguistic mapping*" was her most frequently used strategy (Appendix 30, red). Perhaps Keeva did not see the necessity to re-engage with Violet when she used a more facilitative approach. Analysis of the video showed that all 3 sessions were variations of a painting activity where Keeva was encouraged to select the paint colours and ingredients (chilli,

mustard, coffee, water) she wished to mix for use in her painting. However, once Keeva had received her requested items from Violet she ignored Violet's attempts to interact with her. Heidi continued to use "eliciting" communication most frequently in particular "waiting" (n. 12) when Keeva "ignored" her.

Repairing interaction breakdowns.

The frequency of Keeva's "protest/refusal" behaviours with Heidi had halved. Heidi was observed to follow her protest with non-directive communication mainly; "*seek clarification*" on what was the matter on 2 occasions, on 4 occasions she "*followed the child's lead*" and on the other occasion she asked a "yes/no" question (Appendix 34, red). However, Keeva's "protesting" behaviours had increased considerably with Violet. The majority of Keeva's protests followed Violet's use of "*playful obstruction*" and "yes/no" questions. Violet followed Keeva's "*protests/refusals*" mainly with facilitative communication using "*follow the child's lead*" and "*social comments*" most frequently. Only 5 of Keeva's "protest/refusal" were followed by "directive" communication from Violet (Appendix 34, red).

Pupil Utterances

The nature of Keeva's speech is reported in Appendices 35 (red) and 38d. The frequency of Keeva's utterances had not increased significantly during the post-PD interaction sessions, in fact she used slight less utterances with her teacher than she had done a year previously. She continued to use one word utterances with both adults. However a number of positive changes in the nature of her utterances were noted during the follow up interactions. All of her utterances were interactive now. Her verbal initiations had almost quadrupled with her teacher and more than tripled to with her SNA. Her use of 2-word or more utterances had increased considerably with both adults. Keeva did not cry during any of the post-PD interaction sessions and was heard to laugh on 2 occasions with her teacher. While Keeva continued to use her speech predominantly for "behaviour regulation" purposes (Violet, 70%; Heidi, 56%), she now used her utterances mainly to request what she wanted whereas a year earlier her speech was used mainly to comply with the adults' directive communication. Seventeen percent and 31% of Keeva's utterances with Violet and Heidi respectively were for joint attention purposes with now, mainly to give information to Violet and to clarify what she meant to Heidi (Appendix 38d). She was also heard to comment on 5 occasions during the post-PD sessions with

Violet. Interestingly, Keeva's use of speech for social interaction with her teacher had decreased significantly (Appendix 37, red). It is possible that the frequency of utterances for social interaction purposes was skewed during the pre-PD sessions with Violet due of the nature of the activity; as the majority of the social interaction utterances occurred during the "singing" session which offered Keeva numerous opportunities to verbally imitate and turn-take within a structure environment. This latter finding highlights the importance of context for the supporting language use for pupils on the AS.

Impact of adult communication on pupil utterances.

Appendix 36d outlines the impact of the adults' style of communication on Keeva's subsequent speech. The adults' used a predominately facilitative style of communication during the post-PD interaction sessions. However, these actions and utterances were not as effective in supporting Keeva's use of speech as the adults' use of "eliciting" communication. Only 31% and 42% of Violet's and Heidi's "facilitating" actions and utterances respectively whereas 49% and 44% of their "eliciting" communication was followed by speech from Keeva. Although "facilitating" utterances were the adults most frequently used communication strategy overall only 9% of such utterances used by Violet and 19% used by Heidi were followed by speech from Keeva. "*Linguistic mapping*" was the adults most frequently used "facilitating utterance" and their most frequently used strategy overall, yet only 6% of such utterances used by her teacher and 16% used by Heidi were followed by speech. "*Follow the child's lead*" (a facilitating action) was their 2nd most frequently used strategy yet only 9% and 14% of the occasions Violet and Heidi used it, Keeva spoke. "*Deliberate ignoring*" (an eliciting strategy) was the adults' most successful strategy as 55% and 75% of the occasions this strategy was used by Violet and Heidi respectively, Keeva spoke. Fifty-one percent of the occasions Violet used "*control access*" were also followed by speech from Keeva. "*Waiting*" was the adults' 2nd most frequently used "eliciting" strategy, yet only 21% of Violet's and 20% of Heidi's "*waiting*" intervals were followed by speech. The rate of "elicit utterances" used by the adults was quite low (Violet, r.0.7; Heidi, r.1.0); over half of Violet's "*choice questions*" and almost all of Heidi's "*seeking clarification*" questions were followed by speech. Interestingly, "*yes/no*" questions (a directive strategy) were also successful when used by Violet, as 49% of such questions were followed by speech utterances.

Section Two Pupil Initiated Interactions

The Nature of Spontaneous Social Interactions Initiated by Freddy

Table 28.5 below, reports the nature of spontaneous interactions initiated by Keeva, in terms of frequency and length. Keeva spontaneously initiated an interaction on 37 occasions with her teacher and on 14 occasions with her SNA during the pre-PD sessions. Only 38% and 29% of her initiations developed into an interaction of 1-turn or more with Violet and Heidi respectively. The majority of Keeva's initiations that did not develop into interactions terminated before they begun because of the adults' use of directive communication, mainly their use of "*behaviour directives*".

The majority of the social interactions that arose from Keeva's spontaneous initiations with Violet were very brief as they terminated after 1 turn. Analysis of what caused the 14 interactions to terminate indicated that on 57% were halted because of the teacher's use "directive" communication, the others ceased because Keeva became non-interactive. The 4 social interactions between Heidi and Keeva terminated because on 3 occasions Keeva ignored Heidi, on the other occasion Heidi used a "*behaviour control*" utterance. The longest social interaction following Keeva's initiations with her classroom adults during the pre-PD sessions lasted for 3 turns with her teacher and 4 turns with the SNA both are described in the vignettes (Vignette 28a and 28b) below.

Table 28.5

No. of Spontaneous Initiations and No. of Turns within Subsequent Interactions

No. of Turns following Keeva's Spontaneous Initiations	No. of Spontaneous Initiations By Keeva Pre		No. of Spontaneous Initiations By Keeva Post	
	Violet	Heidi	Violet	Heidi
0	23	10	6	3
1	10	1	12	3
2	2	2	7	4
3	2	0	8	2
4	0	1	5	1
5	0	0	4	3
6	0	0	5	1
7+	0	0	11	6
	14/37	4/14	52/58	20/23

Vignette 28a

Longest Interaction Spontaneously Initiated by Keeva with Violet Pre-PD Sessions.

While looking at pictures together, the teacher labels a picture as “slide”

Keeva immediately takes a picture from the table and says “teddy, teddy” (I). Violet holds the picture with Keeva and recasts saying “ball” (RR). Keeva imitates the teacher saying “ball” (R) and the teacher says “good girl, ball”. Keeva tries to take the picture to look at it (I) Violet removes the picture from Keeva’s hands (BD).

*I-RR/R-R /I-BC (3 turns: Keeva, 1*initiation- 1 response; Violet, 0 initiation 2 responses).*

** Note only initiations followed by a response are considered a “completed initiation” within the interaction.*

Vignette 28b

Longest Interaction Spontaneously Initiated by Keeva with Heidi Pre-PD Session.

Heidi tickles Keeva’s leg with a feather duster

Keeva pushes the feather duster away (I), Heidi does as she is asked(R), she then says “What would you like Keeva” showing her the feather duster and the sensory brush (II), Keeva reaches for the sensory brush (R), Heidi deliberately ignores her (R), Keeva takes her hand down (R), Heidi offers Keeva the choice again saying “Which one Keeva” (I) Keeva ignores her as she pulls her sock up and down her leg (NI).

I-R/II/R-R/R-I/NI (4 turns: Keeva, 1 initiation-2 responses; Heidi, 1* initiations -2 responses)*

** Note only initiations followed by a response are considered a “completed initiation” within the interaction.*

Keeva’s spontaneous initiations had increased considerably during her post-PD interaction sessions with the adults (Table 28.5 above). As already reported the majority of her initiations were for “behaviour regulation” purposes. These findings suggest Keeva’s growing awareness of her ability to influence her environment through the use her communication. Ninety percent of her initiations now developed into social interactions with the adults, highlighting that the adults were becoming aware of Keeva’s initiations

and acting on them in a positive manner. The majority of the interactions were now 3 turns or more. Twenty-one percent of Violet's and 33% of Heidi's interactions with Keeva were now 7 turns or more. The duration of longest interaction continued for 18 turns with both adults (Violet; Vignette 28c below and Heidi; Vignette 28d below). Analysis showed that both the adults and the pupil played an almost equal role in terminating the post-PD social interactions.

Vignette 28c

Longest Interaction Spontaneously Initiated by Keeva with Violet Post-PD Sessions.

During the follow-up interactions the following occurred.

Keeva and Violet were painting; they each had a sheet with an outline of a cat drawn on it. Keeva held a paint brush and a sponge shape. There was a bowl for paint in front of Keeva, Violet had the bottles of paint in sight but out of Keeva's reach.

Keeva smelled the paint on the paint brush (I). Violet linguistically mapped what she was doing "smell" (R). Keeva offers the sponge shape to Violet (I) who deliberately ignores the action (R). Keeva places the sponge on the table (R) and immediately reaches (I) towards the paints saying "green" (I). Violet deliberately ignores her (R). Keeva says "painting" (I) gesturing again (I), Violet expands saying "green paint, you want green paint" (R), holding it out of Keeva's reach (I). Keeva reaches for the paint (R). Violet deliberately ignores her action (R). Keeva vocalises in protest "aaah" (R) and reaches for the paint again (I). Violet gives her the bottle (R). Keeva opens the bottle (R) upturns it (R) and squeezes it into the bowl saying "spill it" (I). Violet linguistically maps "Keeva is squeezing" (R). Keeva squeezes again (R), Violet waits (R). Keeva puts the bottle down (I) takes Violet's hand and places it on the bottle (I) saying "squeeze" (I). Violet expands saying "squeeze it" (R) and does what is asked (R). Keeva looks at Violet squeezing (R). Violet says "squeeze" as she squeezes (I) Keeva helps her (R). Violet says "squeeze" again as she squeezes (I) and Keeva watches what she does (R). Violet says "oh it came out" (I). Keeva looked into the bowl (R). Violet said, "it came out" (I). Keeva begins to mix the paint in the bowl ignoring the teacher. (NI)

I-R/I-R/II-R/II-RI/R-R/RI-R/RR/III-RR/R-I/R-I/R-I/NI (18 turns: Keeva 7 initiations, 9 responses; Violet, 4* initiations, 9 responses)*

** Note only initiations followed by a response are considered a “completed initiation” within the interaction.*

Vignette 28d

Longest Interaction Spontaneously Initiated by Keeva with Heidi Post-PD Session.

Heidi and Keeva were at waterplay. They shared a basin and a waterwheel. Heidi had bottles filled with coloured water and cups in sight but out of reach.

Keeva takes Heidi’s hand and uses it to wipe the table (I) Heidi allows her to use it (R) saying “table is wet” (R). Keeva pushes Heidi’s hand to another wet spot (I) and Heidi continues to wipe the table with her hand (R) saying “Wet” (R). Keeva takes Heidi’s hand again and moves it to another wet spot (I), Heidi follows her lead (R). Keeva says “cloth” (I). Heidi gives her a tissue (R) labelling it “tissue” (R). Keeva takes the tissue (R) and wipes the table with it (I). Heidi says “wipe table” as she does (R). Keeva puts Heidi’s hand on the tissue (I) and Heidi says “tissue”(R) and she wipes the table (I). Keeva watches (R) keeping her hand on Heidi’s hand to help her clean(R). Heidi labels the tissue again(R) as she puts it away (I). Keeva reaches for a bottle of water beside Heidi (I) and says “cup” (I). Heidi deliberately ignores her (R). Keeva says “e e cup” (I) pointing to the cup (I). Heidi gestures with her hands and waits (RR). Keeva says “pour in cup”(R). Heidi repeats what she said “Pour in cup” (R). Keeva lifts the cup towards the bottle (I), Heidi fills the cup (R) and says “cup full”(R) as Keeva waits (R). Keeva then pours the water from the cup into the basin (I). Heidi says “ooh, wobble, wobble” as Keeva moves the cup (R). Keeva reaches to the bottle beside Heidi (I) and says “cup”(I). Heidi seeks clarification “What Keeva” (R). Keeva clarifies “I want cup” (R). She reaches for the bottle of water (I). Heidi prompts her “you want me to pour the ...” (VP).

*I-RR/I-RR/I-R/I-RR/RI-R/I-RI/RR-RI/II-R/II-RR/R-R/I-RR/RI-R/II-R/RI-verbal prompt (18 turns: Keeva, 12 initiations, 5 responses; Heidi, 2 Initiations, 13 responses) **Note only initiations followed by a response are considered a “completed initiation” within the interaction.*

** Note only initiations followed by a response are considered a “completed initiation” within the interaction.*

Reciprocity within the interactions.

Evidence was sought for communicative balance (reciprocity) within the child-initiated interactions of 2-turns or more. Reciprocity was measured by rate of “complete initiations” achieved by each communicative partner during each interaction. For this study a “complete initiation” was defined as “an initiation followed by a response from the other participant”.

Keeva’s initiated interactions had a minimum of 2-turns on 4 occasions during the pre-PD sessions with Violet and twice during her session with Heidi (Table 28.5 above). Keeva led all of those 6 interactions. Analysis showed that Heidi tried to use a non-directive initiation during the 4-turn interaction (Vignette 27b above). However, Keeva ignored her.

Keeva continued to dominate the interactions with both adults during the post-PD sessions as she led 32 of the 40 interactions initiated by her with Violet and 16 of the 17 with Heidi (Table 28.5 below). Violet only led 3 of the interactions. There was balance of turns was evident in 5 of their interactions. Further analysis of the balance within the 32 Keeva “led” interactions with Violet indicated that the majority (N.18) of the interactions were just slightly imbalanced in Keeva’s favour as in 9 incidences the initiations were 1-0; in 6 they were 2-1; in another case they were 3-2; and in 2 cases they were, 4-3. Only one of the interactions was highly imbalanced as Keeva initiated 5 times while Violet did not initiate at all in the other. This finding suggests that reciprocity was developing with the Keeva-Violet interactions. There was evidence of greater imbalance within the Keeva led interaction with Heidi as, nine of the 16 interactions Heidi did not initiate at all, on 3 other occasions Keeva had 3 more initiations than Heidi (1, 6-3 and 2x 4-1) and during their longest interaction, Keeva had 10 more initiations than Heidi (see vignette 27d above). Overall, these findings suggest an understanding on the part of the adults, that in order to maintain the interactions with Keeva, they needed to allow her lead the interaction.

Table 28.6*Reciprocity within the Pupil Initiated Interaction Cycles Post-PD*

Turns	Leads the Interaction Keeva -Violet				Leads the Interaction Keeva-Heidi			
	Number of Interactions	Keeva	Violet	Balanced	Number of Interactions	Keeva	Heidi	Balanced
2	7	6	0	1	4	4	0	0
3	8	6	0	2	2	2	0	0
4	5	4	0	1	1	1	0	0
5	4	3	1	0	3	3	0	0
6	5	5	0	0	1	1	0	0
7+	11	8	2	1	6	5	1	0
Total	40	32	3	5	17	16	1	0

Shared Positive Affect

Keeva was did not laugh during the pre-PD interactions sessions with the adults. She protested on 28 occasions with Violet (Appendix 38). 15 were verbal protests; 13 were bouts of crying and on the other 2 occasions she shouted “No”. Her nonverbal “*protests/refusals*” included behaviours such as; undoing what the teacher did, pushing teacher’s hand away, refusing to do what teacher asked and running away from table. As highlighted above the “Singing” session supported “positive affect” most, as Keeva did not protest during that session. Keeva protested/refused on 14 occasions with Heidi; half were verbal (whines and whines mixed with utterances). The seven nonverbal “*protests/refusals*” included pulling items and her arm or leg from Heidi.

During the post-PD interaction sessions Keeva was heard to laugh on 2 occasions when her teacher playfully pretended she was going to paint Keeva’s nose. However, as discussed above Keeva’s “*protests/refusals*” had increased considerably with Violet. 11 were verbal; 9 were saying “no” in response to Violet’s yes/no questions e.g. “can/will I help/ can I have some?” Two were loud whimpers (when Violet removed her bowl and Violet left a pause in a song). Keeva’s nonverbal “*protest/refusals*” were mainly pushing Violet’s hand away when she playfully put her brush into Keeva’s dish and pulling items from Violet. Interestingly, Keeva protested least often during the first painting session and protested most often during the 3rd painting session, perhaps suggesting that when the activity was novel Keeva was interested in what should and could be done but once she had an idea herself she wanted to explore/use the items without Violet’s input. Keeva’s

protests had halved with Heidi. All were actions such as pulling Heidi's hands away, pushing away an offered item and pulling her hood up when Heidi pulled it playfully down.

Summary

The adults from in this case dominated the interactions prior and following to their engagement in the PD. However, Keeva's interactive communication had increased during the post-PD sessions resulting in a closer ratio of adult-pupil communication, particularly the SNA-pupil. Prior to their engagement in the PD the teacher used a predominately directive style while the SNA used mainly nondirective style of communication. However, she used "behaviour directives more frequently than any other communication strategies. The time spent in positive shared engagement was low during the pre-PD sessions. The context of the interaction seemed to impact on positive shared engagement as the duration was considerably more during the "Shopping" session (a CA) compared to the SA and AA teacher sessions.

Both adults reduced their use of directive communication considerably. While the duration of positive shared engagement with both adults increased, the improvement was not as dramatic within the teacher-pupil interactions. Both adults brought SA to their sessions, but the teacher brought the same type to all three of hers which may have accounted for the difference in duration of engagement. The actual resource(s) used may also have had an influence. The SNA brought an activity that had inbuilt fun which the painting activity did not.

Keeva was heard to protest regularly with both adults during the pre PD, but context seemed to impact on her use of protests. Keeva did not protest during the CA session with her teacher. Keeva's protests increased and were heard during all of the post-PD sessions with her teacher. The nature of SA seemed to influence her protests. Keeva was happy to engage with the teacher to request items but once they were received she did not like the teacher's efforts to engage with her.

Keeva used on average 5/4 utterances per minute with teacher and SNA respectively during the pre-PD sessions. They were mainly single words used to "behaviour regulation" purposes and in particular to comply with her teacher's directives. The frequency of her utterances did not change much during the post-PD but she used longer

utterances more frequently and used them mainly to have her needs met. The findings show that although the adults used mainly facilitating actions and utterances during the post-PD interactions, their use of “eliciting” communication were far more effective in supporting Keeva’s language use, particularly “eliciting” actions. “*Verbal prompts*” (a directive strategy) was also found to be a highly effective.

Keeva’s initiations increased during the post-PD particularly her verbal initiations. Prior to their engagement in the PD the adults had difficulty recognising and prolonging Keeva’s spontaneous interactions with them. However, at follow up many of Keeva’s initiations led to social interactions and the length of such interactions increased with both adults. The increased length was supported by the adults allowing Keeva lead the interactions.

Appendix 29 Case Study Grindstone

The Case Participants: The Classroom adults

Maddie, the Grindstone teacher was in her late twenties. She had a Post Graduate Diploma in Education and had been teaching for three years. She had been teaching in an autism specific class for six months prior to participating in the study. Trevor (the participant student on the AS) was one of six students in her class. Maddie had completed a part-time Postgraduate Diploma in Special Educational Needs that included a module on autism, prior to joining the study. She also had attended a 2-day TEACCH course, a 1-day PEP-3, 1-day Social Stories, 2-day Crisis Prevention and a 5-day ABA course (Table 29.1).

Donna was in her early fifties and had been working as a SNA in the class for students on the AS in Grindstone School for seven years. Trevor had enrolled in the class two years prior to the commencement of the study. Donna reported having no specific training in autism.

Table 29.1

Demographic Information of Classroom Adults

Grindstone			
		Teacher	SNA
Name		Maddie	Donna
Age		25+	50+
Highest Qualification		PGDSEN	FETAC Level 5
Experience		3 years	7 years
Experience ASD		1 year	7 years
Autism PD		PG Module and a number of short courses	None

The Case Participants: Pupil

Trevor was diagnosed with autism at 41 months and was reported to have a moderate learning disability although his teacher believed that he was functioning in the severe range. Trevor had completed a year in an ABA specific preschool prior to moving to Grindstone school. For the duration of the study, a speech and language therapist supported the class once every two months withdrawing Trevor for approximately half an hour at each visit. Prior to and for the duration of the study Trevor had access to an ABA

tutor for an hour after school on two afternoons a week. He was 7 years 3 months when he joined the study and 8 years 4 months when the follow-up information was collected.

Maddie described Trevor as easy to work with stating “he mainly sits for us when we are doing out table top work”. However, she selected him as the pupil participant for the study as she struggled to teach him explaining, “*Trevor is nonverbal I mean he has no words at all and it is difficult to teach him, I mean I seem to be getting through to the others but he is more difficult... Like if we are not working with him he would never come near us*” (Pre-PD Interview). Donna also spoke of the difficulty of communicating with him. “*He is so different, it is hard to communicate with him, trying to understand what it is he wants, see he has no speech, no speech at all, I feel terrible when he is crying because you can’t just cry for no reason so obviously there is a reason, but we don’t know what it is*” (Pre-PD Interview). When asked about his communication skills Maddie stated that Trevor only communicated “*if he really, really, really wants something and when he doesn’t want to use his PECs card he will take your hand and guide you hand to whatever he wants*”. She added that if he can get the item himself he will, “*rather than going through the whole rigmarole of getting someone or getting a PECs card...if you have something he wants he will just try and take it off of you*” (Pre-PD Interview). Both adults reported that Trevor was heard to say the word “No” repeatedly when he was upset and “if he really, really doesn’t want to do something like go to the toilet he would shout “No” (Maddie, Pre-PD Interview).

The pre-PD PEP-3 (Table 29.2 below) assessment identified that Trevor had great difficulty with receptive and expressive language abilities. His ability in social reciprocity was assessed as being in the severe range.

The post-PD PEP-3 assessment indicated that there was a slight improvement in his language skills. There was a considerable improvement in his reciprocity skills.

Table 29.2*Pupil Age, Nature of SEN- and PEP-3 Assessment Results*

	Grindstone					
Name	Trevor					
Age	7years 3 months at beginning of study					
No. of years in school	1 year					
Nature of SEN	Autism with Moderate General Learning Disability					
	Pre PD			Post P		
PEP-3 Results	Developmental Level	Percentile Rank	Age Equivalent	Developmental Level	Percentile Rank	Age Equivalent
Expressive Language	Severe	2%	<12months	Severe	6%	13 months
Receptive Language	Severe	8%	12 months	Severe	2%	15 months
Social Reciprocity	Severe	18%		Moderate	59%	

Section 1 Interactions Prior to the Professional Development Initiative**Context and Duration of Positive Shared Engagement**

Table 29.3 below gives a brief description of the context of the pre-PD 1:1 interaction sessions and the percentage of time the dyads spent in positive shared engagement. On average 44% of the three pre-PD teacher-pupil interactions sessions were spent in positive shared engagement while Donna and Trevor spent 57% of their session positively engaged. Fifty-nine percent of the actions and utterances used by Trevor with Maddie were interactive; (9%, initiations and 50%, responses) while 76% were interactive with Donna (31%, initiations; and 45% responses) (Appendix 30, yellow).

Maddie and Trevor spent more time in positive shared engagement during the academic activity (AA) than they did during either of the other two sessions (Table 29.3 below). Trevor protested least often during that session. Interestingly, Maddie used “directive” communication and in particular, “behaviour directives” more frequently during that session (Appendix 32). Donna also brought AA to her interaction session and used “behaviour directives” as frequently as the teacher. The dyad spent more than half the time in positive shared engagement. These latter findings may be explained by a number of factors identified from the adults’ pre-PD interviews. Trevor’s regular access to ABA tutoring may have supported his engagement with academic activities. Further, his teacher

reported that he was happy to do table top work with them and that he had good fine motor skills. Contexts that incorporate the pupil skills may support greater engagement.

Table 29.3

Context, Resources and Percentage of Session Spent in Positive Shared Engagement

Grindstone Pre PD			
	Interaction Context	Resources	Percentage of Session in Positive Shared Engagement
Maddie and Trevor	Session 1 Academic Activities (AA)	Lacing board and lace and a peg board and box of coloured pegs	55%
	Session 2 Solitary Activities (SA)	Lunch	33%
	Session 3 Solitary Activities (SA)	Jigsaw and Train set	44%
Donna and Trevor	Session 1 Academic Activities (AA)	Stacking wooden shaped on dowels and picture matching	57%

Adults' Style of Communication and Student's Subsequent Engagement

Appendix 31 (yellow) outlines the communication strategies and the frequency they were used by adults during the interactions. The adults in this case worked hard at maintaining their interactions with Trevor and dominated the pre and post interactions. Maddie and Donna communicated with their pupil at a rate of 19.2 and 31.6 actions and utterances respectively per minute while the rate of Trevor's interactive communication was 11.3 (teacher) and 18.5 (SNA) (Appendix 38). The teacher was observed to be predominantly "directive" with 58% of Maddie's and 46% of Donna's actions and utterances "directive" in nature. However, both adults used "behaviour directives" mainly during the interactions (Teacher, 51%; SNA, 41%). "*Behaviour control*", "*nonverbal commands*" and "*verbal commands*" were Maddie's most frequently used directives while Donna used "*nonverbal commands*" and "*verbal commands*". Analysis of Trevor's behaviours immediately following the adults' "directive" communication indicated that 67% and 87% were complying with Maddie and Donna respectively (Appendix 33,

yellow). Trevor rarely protested during his sessions with the adults (Teacher, r.0.4; SNA, r.0.5 per minute). These latter two findings concur with the adults' description of their pupil's learning characteristics. Fifty-five percent of his protests followed his teacher's "directive" communication, all following her use of "behaviour" directives, suggesting that although he mainly complied he did not like being told what to do.

Maddie used two "facilitative" strategies regularly; *"social comments"* and *"linguistic mapping"*. She did not use "eliciting" strategies with any real frequency. Donna used four facilitating strategies regularly during the pre-PD sessions; *"social comments"*, *"linguistic mapping"*, *"follow the child's lead"* and *"model"*. She also used *"wait"* an "eliciting" strategy at least once a minute (Appendix 31, yellow).

Repairing interaction breakdowns.

A sequential analysis of the data to ascertain the style of communication used by the adults following Trevor's "ignoring" (Appendix 34, yellow) and "protest/refusal" behaviours (Appendix 35, yellow) indicated that both adults followed the majority of Trevor's "ignoring" and "protesting" behaviours with "directive" communication. The adults used "behaviour" directives most frequently to repair the breakdowns in the interactions.

Nature of Pupil's Communication Pre-PD.

Appendices 33 and 38 (yellow) report the nature of Trevor's communication. During the pre-PD interaction sessions 68% and 71% of Trevor's communication was interactive with Maddie and Donna respectively. Trevor used his communication mainly for "behaviour regulation" purposes with both adults during the pre-PD interactions (Maddie, 75%; Donna, 70%). Seventy-eight percent and 82% of his "behaviour regulation" communication were to comply with Maddie and Donna's directed him to do respectively. He rarely used his interactive communication to *"refuse/protest"* (Maddie, 3%; Donna, 5%). He used almost all of his remaining communication for social interaction purposes, mainly to "acknowledge" what the adults did or said. Ten percent and 12% were initiations with his teacher and his SNA. The majority of his initiations were for "behaviour regulation" purposes either to *"request"* items or to *"protest/reject"* what was being said or done. Two of Trevor's initiations were joint attention behaviours, on one occasion while he was eating he gave the teacher eye contact while smiling and he looked back at what he was eating (as if to *"comment"* "I like this"). On the second

occasion he initiated to “*seek information*” when he was having difficulty knowing where to place a jigsaw piece. He tried to put it in a slot and stopped, looked the teacher in the eye and back to the puzzle as if to ask, “Is this where it goes”?

He vocalised on six occasions with his teacher. However two were non-interactive when he vocalised as he worked on the jig-saw ignoring his teacher. He whined in protest when his teacher his teacher took a piece of chicken back from him when he had taken two pieces. He vocalised as if in imitation when she labelled chicken as she gave him a piece and on four occasions with his SNA during the pre-PD interaction sessions. He acknowledged Maddie with a vocalisation when she helped him with his drink and as she helped him with the lacing activity. Trevor used PECS on 17 occasions during the pre-PD lunch session with his teacher, on 10 occasions to request “chicken” and on four occasions to request “drink”. He also complied with his teacher’s outstretched hand on three occasions by giving her the PECS symbol. Trevor vocalised on four occasions with Donna, all were whimpers of protest, three immediately followed a directive while on another occasion he sought to terminate the matching activity. He requested “crisp” three times from her, using a “reach” gesture once and sign language on the other two occasions.

Section 1 Interactions Post Professional Development Initiative

Context and Duration of Positive Shared Engagement

The post-PD interaction clips were collected by the researcher when she returned to each of the schools to interview the adults and to reassess the pupil. On my return to Grindstone, the teacher only submitted one 10 minute interaction clip for the follow up analysis. She explained that she hadn’t had the time to video three interactions as Trevor had been absent from school due to illness and he had also gone on holiday. Maddie had promised to send on the clips before the school closed for the summer vacation, but this did not happen.

Maddie used a Co-operative Activity for the post interaction session. She and another adult played a “swinging” game with Trevor. When Trevor requested a swing, one adult held him under his arms and the other by his legs while swinging him from side to side for a number of turns. On termination of the “swinging” he was dropped playfully into a beanbag. The other adult then stepped away but remained close. Donna and Trevor played together on an adult size trampoline (Solitary Activity) in the school yard. Trevor’s PECS book was left inside the trampoline safety net sometimes but on other occasions

another adult placed it a short distance from the trampoline. Trevor had to go and retrieve the picture of “jump” from his PECS book to give to Donna. On receiving the request Donna took Trevor’s hands and they both jumped together.

The duration spent in positive shared engagement by the dyads increased considerably. Video analysis revealed that Trevor really enjoyed both activities and was highly interactive with both adults. The time spent in positive shared engagement was briefer during Maddie and Trevor’s interaction session as Trevor was sometimes “side-tracked” by items that were in the room when he went to retrieve his picture of “swing”. Although Trevor also had to travel to retrieve his picture for his “jumping” game with Donna, he only got side tracked once.

Table 29.4

Post-PD Interaction Context, Resources and Percentage of Session Spent in Positive Shared Engagement

Grindstone Post PD			
	Interaction Context	Resources	% of Session in Positive Shared Engagement
Maddie and Trevor	Session 1 Co-operative Activities (CA)	Swinging	76%
	No video submitted		
	No video submitted		
Donna and Trevor	Session 1 Solitary Activities (SA)	Trampoline	ach92%

Adults’ Style of Communication and Student’s Subsequent Engagement

There was a significant decrease in the three participants’ rate of communication during the post-PD interactions. Maddie communicated at a rate of 10.9 and Donna, 13.9 per minute (Appendix 31, yellow). Trevor communicated at a rate of 8.1 actions and utterances with his teacher and 9.4 with Donna (Appendix 38, yellow). The nature of the activity used by both adults may offer an explanation for this finding. As explained above Trevor often had to travel to retrieve a PECs picture to make a request and when the request was made, time was spent either swinging or jumping. However the adult-child communication ratio had decreased.

Appendix 31 (yellow) reports the adults' style of communication and strategy use. The adults' communication was predominately nondirective during the post-PD interactions (Maddie 81%; Donna, 82%). Both used three nondirective strategies mainly; "*linguistic mapping*" and "*follow the child's lead*" (facilitating strategies) and "*wait*" (eliciting" strategy). However, Maddie continued to use "*nonverbal command*" (behaviour directive) and Donna used "*nonverbal command*" and "*command*" (behaviour directives) at least once a minute.

Seventy-six percent and 93% of Trevor's actions and utterances with his teacher and SNA respectively were observed to be interactive during the post-PD sessions (Appendix 38, yellow). His initiations had tripled; 31% and 36% of his communication with Maddie and Donna respectively were initiations (Appendix 30, yellow). The frequency of Trevor's "ignoring" behaviours had decreased considerably with the adults in particular with Donna (Appendix 38, yellow). Maddie used "*wait*" (eliciting strategy) most frequently when Trevor ignored her. However, "*nonverbal command*" was her 2nd most frequently used strategy when this happened (Appendix 31, yellow). Trevor only protested once during the post-PD session with his teacher. He refused to get up from the beanbag. The teacher followed this refusal with an exaggerated tickle of his tummy (facilitating strategy). Trevor's protested/refused five times with Donna. On two occasions she followed his lead (facilitative strategy) and on the other three she used "*nonverbal commands*".

Trevor used his communication mainly for "social interaction" purposes with both adults during the post-PD interactions (Maddie, 74%; Donna, 57%). He acknowledged with the adults did/said, he requested social routines and he sought positive attention from them (Appendix 38, yellow). Nearly all of his "behaviour regulation" communication was used to comply with the adults' directives. Five percent and 8% of his communication with his teacher and SNA was for the purpose of "joint attention". Appendix 39E reports the nature of Trevor's utterances. He vocalised 16 and 15 times during the 10 minute interactions with Maddie and Donna respectively. Nine of his vocalisations with Maddie were initiations and five were initiations with Donna. He mainly initiated for social interaction purposes with both adults; he vocalised into their faces seeking their attention. However, four vocalisations with Maddie and eight with Donna were bouts of laughter, following the adults' actions, commenting that he liked what he experienced. Trevor used PECS during the interactions with both adults. He requested a "swing" from his teacher

on 15 occasions and “jump” on 11 occasions with his SNA at follow up. Trevor was reported to have the word “No” at the beginning of the study and that he was beginning to use PECs as a means of communication. Trevor was not heard to use any words with either adult during the pre and post interaction sessions.

Section Two Pupil Initiated Interactions

The Nature of Spontaneous Social Interactions Initiated by Freddy

Table 29.5 below, reports the nature of spontaneous interactions initiated by Trevor, with Donna his SNA prior to and following her participation in the PD initiative. The nature refers to the frequency and length of Trevor’s spontaneous interactions. A comparison could not be carried out between Maddie and Trevor’s pre and post interactions as Maddie had not submitted the required number of post interaction clips. Trevor spontaneously initiated an interaction on 24 occasions with Donna during the pre-PD sessions. Thirty-eight percent developed into a social interaction of 1-turn or more. Almost all of Trevor’s initiations that did not develop into interactions were terminated by Donna, on 13 occasions she used directive communication and on the other occasions she did not respond to Trevor before introducing a new topic. None of the social interactions initiated by Trevor continued beyond two turns. Donna halted four of the six initiations that had one turn and two of the three initiations that had two turns with her use of directive communication.

Following the PD, Trevor spontaneously initiated on 18 occasions. Seventy-eight percent of the interactions developed into social interactions. Fifty percent of the interactions were terminated by each communicative partner. Six of the interactions continued for 6 turns or more with the longest lasting 16 turns (Vingette 29a below).

Table 29.5*No. of Spontaneous Initiations and No. of Turns within Subsequent Interactions*

No. of Turns following Trevor's Spontaneous Initiations	No. of Spontaneous Initiations By Trevor Pre	No. of Spontaneous Initiations By Trevor Post
	Donna	Donna
0	15	4
1	6	0
2	3	2
3	0	2
4	0	4
5	0	0
6	0	1
7+	0	5
	9/24	14/18

Vignette 29a Longest Interaction Initiated by Trevor with Donna Post-PD Session.**Trevor and Donna were jumping on the big trampoline and the game had stopped**

Trevor gets off the trampoline and gets a symbol from his symbol book and gives it to Donna (III). Donna says "Oh Trevor wants the trampoline"(R). She shows Trevor the symbol (I), Trevor points to it (R). Donna says "you want jump"(R). Trevor jumps high (I), Donna labels "jump" while jumping with him (RR). Trevor drops to his knees (I), Donna says "jump"(R). Donna moves towards Trevor saying "Ha" in an exaggerated voice and says "laughing"(III). Trevor bounces towards her (R). Donna labels jump"(R). He jumps again (I) and Donna labels(R). Trevor jumps high and across the trampoline (I), Donna says "Oh clever boy"(R). Trevor jumps down onto his tummy (I); Donna says "down you go"(R). Donna sits down on the trampoline (I), Trevor looks at her (R), Donna says "tired" (R). Trevor grabs her hand and pulls her (II). Donna says "pull"(R). Then she seeks help saying "oh pull" (II). Trevor pulls (R), Donna stands up and begins to jump labelling "jump" (RR). Trevor jumps with her (R). He pulls his hand away from hers (I) she lets go while saying jump (I). Donna grabs his hands (Nonverbal command).

III-RI/R-R/I-RR/I-RIII/R-R/I-R/I-R/I-RI/R-R/II-RII/R-RR/RI-R NVC (16 turns: Trevor 8* initiations, 5 responses; Donna, 4* initiations, 12 responses).

** Note- only initiations followed by a response are considered a "completed initiation" within the interaction.*

Reciprocity within the interactions.

Evidence was sought for communicative balance (reciprocity) within the child-initiated interactions of 2-turns or more. Reciprocity was measured by rate of “complete initiations” achieved by each communicative partner during each interaction. For this study a “complete initiation” was defined as “an initiation followed by a response from the other participant”.

Three of the interactions spontaneously initiated by Trevor during the pre-PD sessions with Donna had a minimum of 2-turns (Table 29.5 above). All three were led by him. He continued to dominate the social interactions he initiated with Donna as he led all 14 interactions that continued for two turns or more during the post-PD sessions. Further, there was only evidence of Donna initiating during four of those post-PD interactions; she initiated once during an interaction that continued for nine turns and seven turns respectively. She initiated on three occasions during an interaction that lasted 15 turns, while during the longest interaction initiated by Trevor she successfully enticed Trevor to respond to her initiations on 5 occasions (See vignette 28a above). These findings suggest that Donna understood that in order to prolong her engagement with Trevor she needed to follow his lead.

Table 26.6

Reciprocity within the Pupil Initiated Interaction Cycles Post-PD

Leads the Interaction Trevor -Maddie					Leads the Interaction Trevor-Donna			
Turns	Number of Interactions	Trevor	Maddie	Balanced	Number of Interactions	Trevor	Donna	Balanced
2					2	2	0	0
3					3	2	0	0
4					4	4	0	0
5					0	0	0	0
6					1	1	0	0
7+					5	5	0	0
Total							0	0

Positive Shared Affect

Trevor rarely protested during the pre and post-PD sessions and when he did, he usually turned or pulled away from the adult or whimpered or moaned. However, he was not heard to laugh during the pre-PD sessions. Trevor was heard to laugh heartily with both adults during the post-PD sessions.

Summary

The average rate of adult communication in this case was considerably higher than the rate of adult communication in the other four cases during the pre-PD interactions. Donna (SNA) communicated more frequently than any of the other adults. A possible explanation for these findings may be the pupil's lack of speech. The pupil also communicated with high frequency and his average rate of communication per minute was higher than the other four pupils. The rate of communication of the three participants decreased considerably during the post PD. The nature of the interaction activity may offer an explanation for this decrease.

The teacher used a predominately directive style of interaction during the pre-PD sessions. However, both adults used "behaviour directives" with very high frequency. The pupil was observed to comply with the majority of the adults' directives and he was rarely heard to protest. The SNA and pupil spent the majority of their session in positive share engagement while the teacher and pupil positively interacted for more than two fifths of their sessions overall. The adults' use of AA seemed to positively influence the duration of shared engagement. The adults used predominately nondirective communication and they spent over 80% of their interaction sessions in positive shared engagement with their pupil during the post PD.

Almost all of the pupil's communication in this case was nonverbal during the pre-PD sessions. The pupil did not develop speech over the lifetime of the study. However, a number of positive changes occurred in his communication. His vocalisations and use of PECS had increased overall. He was heard to laugh on number of occasions with both adults. His initiations increased considerably. He communicated mainly for behaviour regulation purposes prior to the PD and for social interaction purposes during the post-PD sessions.

Prior to her engagement in the PD the SNA had difficulty recognising and prolonging her pupil's spontaneous interactions. However, at follow up the majority of Trevor's spontaneous initiations led to social interactions and the duration of those interactions increased. The increased length was supported by allowing Trevor to lead the interactions.

Appendix 30: The Role, Frequency and Percentage of Pupils' Verbal & Non-Verbal Behaviours Across Contexts.

Charlie: Shanbailey		Pre PD								
		Initiation			Non-Interactive			Response		
		NV	V	T	NV	V	T	NV	V	T
<i>Teacher</i>	Co-operative	9	5	14	76	1	77	50	27	77
	Solitary	3	1	4	75	1	76	37	23	60
	Solitary	6	1	7	93	0	93	49	28	77
	Total	18	7	25 (5%)	244	2	246 (51%)	136	78	214 (44%)
<i>SNA</i>	Academic	8	2	10 (6%)	75	0	75 (47%)	29	46	75 (47%)
		Post PD								
		NV	V	T	NV	V	T	NV	V	T
<i>Teacher</i>	Co-operative	37	27	64	24	0	24	96	32	128
	Co-operative	40	16	56	27	0	27	109	22	131
	Co-operative	16	12	28	42	0	42	82	28	110
	Total	93	55	148 (24%)	93	0	93 (15%)	287	82	369 (61%)
<i>SNA</i>	Co-operative	22	7	29 (14%)	58	1	59 (28%)	74	45	119 (58%)

Freddy: Clonadoo		Pre PD								
		Initiation			Non-Interactive			Response		
		NV	V	T	NV	V	T	NV	V	T
<i>Teacher</i>	Co-operative	15	1	16	49	0	49	47	2	49
	Solitary	14	1	15	51	0	51	53	1	54
	Solitary	33	5	38	63	0	63	76	4	80
	Total	62	7	69 (17%)	163	0	163 (39%)	176	7	183 (44%)
<i>SNA</i>	Academic	7	0	7 (5%)	46	0	46 (30%)	97	2	99 (65%)
		Post PD								
		NV	V	T	NV	V	T	NV	V	T
<i>Teacher</i>	Co-operative	28	17	45	19	1	20	98	20	118
	Co-operative	36	24	60	23	1	24	92	24	116
	Co-operative	23	39	62	51	2	53	74	21	95
	Total	87	80	167 (28%)	93	4	97 (16%)	264	65	329 (56%)
<i>SNA</i>	Co-operative	32	10	42 (23%)	30	2	32 (18%)	95	10	105 (59%)

Elana: Windyvale		Pre PD								
		Initiation			Non-Interactive			Response		
		NV	V	T	NV	V	T	NV	V	T
<i>Teacher</i>	Academic	6	11	17	66	9	75	57	18	75
	Academic	31	11	42	55	8	63	70	4	74
	Co-operative	25	11	36	42	3	45	50	60	110
	Total	62	33	95 (18%)	163	20	183 (34%)	177	82	259 (48%)
SNA	Solitary	21	28	49 (22%)	50	10	60 (28%)	66	42	108 (50%)
		Post PD								
		NV	V	T	NV	V	T	NV	V	T
<i>Teacher</i>	Co-operative	40	25	65	10	0	10	104	30	134
	Solitary	41	11	52	43	1	44	70	13	83
	Co-operative	52	38	90	27	1	28	115	24	139
	Total	133	74	207 (32%)	80	2	82 (13%)	289	67	356 (55%)
SNA	Co-operative	46	17	63 (29%)	29	0	29 (13%)	107	21	128 (58%)

Keeva: Bridgeport		Pre PD								
		Initiation			Non-Interactive			Response		
		NV	V	T	NV	V	T	NV	V	T
<i>Teacher</i>	Solitary	4	2	6	85	4	89	43	15	48
	Co-operative	22	9	31	89	5	94	87	66	153
	Academic	6	5	11	49	5	54	44	34	78
	Total	32	16	48 (9%)	223	14	237 (41%)	174	115	289 (50%)
SNA	Solitary	11	6	17 (13%)	49	4	53 (39%)	32	32	64 (48%)
		Post PD								
		NV	V	T	NV	V	T	NV	V	T
<i>Teacher</i>	Co-operative	27	16	43	40	0	40	59	20	79
	Co-operative	48	29	77	57	0	57	128	39	167
	Co-operative	24	18	42	30	0	30	47	18	65
	Total	99	63	162 (27%)	127	0	127 (21%)	234	77	311 (52%)
SNA	Co-operative	51	30	81 (40%)	37	0	37 (19%)	60	22	82 (41%)

Trevor: Grindstone		Pre PD								
		Initiation			Non-Interactive			Response		
		NV	V	T	NV	V	T	NV	V	T
<i>Teacher</i>	Academic	12	0	12	46	0	46	108	1	109
	Solitary	19	0	19	36	0	36	77	3	80
	Solitary	17	0	17	78	2	80	97	0	97
	Total	48	0	48	160	2	162	282	4	286
				(9%)			(33%)			(58%)
<i>SNA</i>	Academic	32	1	33	25	0	25	45	3	48
				(31%)			(24%)			(45%)
		Post PD								
		NV	V	T	NV	V	T	NV	V	T
<i>Teacher</i>	Co-operative	23	9	32	72	1	73	146	6	152
				(12%)			(28%)			(59%)
<i>SNA</i>	Solitary	33	5	38	7	0	7	49	10	59
				(36%)			(7%)			(57%)

Appendix 31: Frequency & Rate per Minute of the Specific Strategies used by the Adults

Communication Style	Strategy	Ella		Nuala	
		Pre N. & R.	Post N.	Pre N.	Post N.
Behaviour Directives	Behaviour Control	40 (1.3)	10	22 (2.2)	9
	Command	57 (1.9)	12	2	11 (1.1)
	Blocking	18	2	4	0
	Nonverbal Command	14	9	39 (3.9)	3
	Removing	4	9	0	2
	Total	133 (4.4)	42 (1.4)	67 (6.7)	25 (2.5)
Communication Cues	Test question	41 (1.4)	23	54 (5.4)	12 (1.2)
	Verbal Prompt	27	22	24 (2.4)	23 (2.3)
	Yes/No Q	74 (2.5)	15	10 (1.0)	9
	Total	142 (4.7)	60 (2.0)	88 (8.8)	44 (4.4)
Facilitating Utterances	Social Comments	33 (1.1)	35 (1.2)	16 (1.6)	1
	Fill in the pauses	3	5	4	2
	Imitation	4	13	1	2
	Linguistic mapping	41 (1.4)	78 (2.6)	10 (1.0)	19 (1.9)
	Recast & Expansion	9	14	1	7
	Self-talk	23	71 (2.3)	0	7
	Total	113 (3.8)	216 (7.2)	32 (3.2)	38 (3.8)
	Acting Silly- Exaggeration	7	59 (2.0)	0	6
	Aiding Child	13	10	0	0
	Child's Level	3	1	0	0
Facilitating Actions	Follow Child's Lead	12	52 (1.8)	3	10 (1.0)
	Imitation	5	4	1	8
	Model	8	9	0	30 (3.0)
	Turn-taking	2	6	0	5
	Seeking Assistance	0	0	0	0
	Switch Activity	12	12	6	7
	Total	62 (2.1)	153 (5.2)	10 (1.0)	66 (6.6)
	Choice Question	15	21	0	6
	Open ended Question	21	12	0	7
	Playful Mislabel	0	3	0	0
Eliciting Utterances	Seeks Clarification	2	6	0	11
	Total	38 (1.3)	42 (1.4)	0 (0.0)	24 (2.4)
Eliciting Actions	Control Access	6	44 (1.5)	1	9
	Deliberate Ignoring	2	42 (1.4)	0	2
	Gestural Prompt	1	15	0	1
	Inadequate portions	0	0	0	1
	Mix up known routines	0	7	0	1
	Playful obstruction	5	13	0	8
	Requiring Assistance	0	10	0	1
	Waiting	51 (1.7)	12	16 (1.6)	7
	Total	65 (2.2)	143 (4.8)	17 (1.7)	30 (3.0)
	Overall Communication	553 (18.4)	656 (21.9)	214 (21.4)	227 (22.7)

Communication Style	Strategy	Síofra		Sunita	
		Pre N. & R.	Post N.	Pre N.	Post N.
	Behaviour Control	23	9	8	4
Behaviour	Command	22	15	14 (1.4)	15 (1.5)
Directives	Blocking	7	2	12 (1.2)	6
	Nonverbal Command	69 (2.3)	9	18 (1.8)	13 (1.3)
	Removing	11	4	7	5
	Total	132 (4.4)	39 (1.3)	59 (5.9)	43 (4.2)
Communication	Test question	8	2	1	0
Cues	Verbal Prompt	17	31 (1.0)	0	1
	Yes/No Q	22	11	14 (1.4)	6
	Total	47 (1.6)	44 (1.5)	15 (1.5)	7 (0.7)
	Social Comments	9	14	15 (1.5)	8
Facilitating	Fill in the pauses	4	8	0	2
Utterances	Imitation	0	16 (0.5)	0	11 (1.1)
	Linguistic mapping	57 (2.0)	135 (4.5)	15 (1.5)	43 (4.3)
	Recast & Expansion	1	13	0	2
	Self-talk	7	49 (1.6)	7	5
	Total	78 (2.6)	235 (7.8)	37 (3.7)	71 (7.0)
	Acting Silly-Exaggeration	0	25	1	0
	Aiding Child	14	34 (1.1)	11 (1.1)	0
Facilitating	Child's Level	3	2	0	0
Actions	Follow Child's Lead	47 (1.6)	105 (3.5)	15 (1.5)	19 (1.9)
	Imitation	1	17 (0.6)	7	27 (2.7)
	Model	33 (1.1)	38 (1.3)	19 (1.9)	16 (1.6)
	Musicality	0	16	1	9
	Switch Activity	20 (0.7)	34 (1.1)	9	9
	Total	118 (4.0)	272 (9.1)	63 (6.3)	80 (7.9)
Eliciting	Choice Question	4	4	0	0
Utterances	Open ended Question	0	1	1	0
	Seeks Clarification	0	1	0	0
	Total	4 (0.1)	6 (0.2)	1 (0.1)	0
	Control Access	12	19	4	2
Eliciting	Deliberate Ignoring	4	6	1	3
Actions	Gestural Prompt	0	4	0	0
	Inadequate portions	5	0	0	0
	Mixing up known routines	1	0	0	0
	Playful obstruction	1	2	0	4
	Waiting	66 (2.2)	127(4.1)	12 (1.2)	18 (1.8)
	Total	89 (3.0)	158 (5.2)	17 (1.7)	27 (2.7)
Overall Communication		468(15.7)	754 (25.1)	192 (19.0)	228 (22.4)

Communication Style	Strategy	Yana		Kim	
		Pre N. & R.	Post N.	Pre N.	Post N.
Behaviour Directives	Behaviour Control	70 (2.3)	5	28 (3.2)	4
	Command	35 (1.2)	10	29 (3.3)	7
	Blocking	45 (1.5)	2	3	4
	Nonverbal Command	74 (2.4)	2	19 (2.2)	2
	Removing	15	3	4	0
	Total	239 (7.9)	22 (0.7)	83 (9.4)	17 (1.9)
Communication Cues	Test question	69 (2.3)	10	2	0
	Verbal Prompt	13	7	4	3
	Yes/No Q	33 (1.1)	58 (1.9)	25 (2.8)	11 (1.3)
	Total	115 (3.8)	75 (2.5)	31 (3.5)	14 (1.6)
Facilitating Utterances	Social Comments	34 (1.1)	23	20 (2.3)	7
	Fill in the pauses	1	2	0	0
	Imitation	0	19	0	5
	Linguistic mapping	7	66 (2.2)	14 (1.6)	22 (2.5)
	Recast & Expansion	9	6	0	0
	Self-talk	3	43 (1.4)	3	14 (1.6)
	Total	54 (1.8)	159 (5.3)	37 (4.2)	48 (5.5)
	Acting Silly-Exaggeration	1	36 (1.2)	1	28 (3.2)
	Aiding Child	0	6	17 (1.9)	4
	Child's Level	0	4	0	0
Facilitating Actions	Follow Child's Lead	16	118 (3.9)	11 (1.3)	32 (3.6)
	Imitation	0	9	0	12 (1.4)
	Model	0	11	0	4
	Turn-taking	0	2	0	0
	Seeking Assistance	0	0	0	0
	Switch Activity	3	30 (1.0)	0	3
	Total	20 (0.7)	216 (7.2)	29 (3.3)	83 (9.4)
	Eliciting	5	7	0	1
	Utterances	24	14	2	4
	Playful Mislabeled	1	0	0	0
Facilitating Utterances	Seeks Clarification	7	4	2	1
	Total	37 (1.2)	25 (0.8)	4 (0.5)	6 (0.7)
	Control Access	7	10	1	0
	Deliberate Ignoring	8	15	4	7
Facilitating Actions	Gestural Prompt	1	7	0	1
	Inadequate portions	0	0	0	2
	Playful obstruction	1	12	4	5
	Show	3	39 (1.3)	1	16(1.8)
	Requiring Assistance	0	7	0	0
	Waiting	76 (2.5)	45 (1.5)	15 (1.7)	7
	Total	96 (3.2)	135 (4.5)	25 (2.8)	38 (4.3)
Overall Communication		561 (18.5)	632 (21.0)	209 (23.8)	206 (23.4)

Communication Style	Strategy	Violet		Heidi	
		Pre N. & R.	Post N.	Pre N.	Post N.
	Behaviour Control	23	1	11 (1.2)	0
Behaviour	Command	68 (2.1)	3	6	1
Directives	Blocking	7	5	7	1
	Nonverbal Command	12	9	7	2
	Removing	10	10	0	0
	Total	120 (3.8)	28 (0.9)	31 (3.2)	4 (0.4)
Communication	Test question	6	9	6	0
Cues	Verbal Prompt	99 (3.2)	25 (0.8)	6	14 (1.4)
	Yes/No Q	33 (1.1)	35 (1.1)	21 (2.3)	4
	Total	138 (4.4)	69 (2.2)	33 (3.6)	18 (1.8)
	Social Comments	23	16	3	2
Facilitating	Fill in the pauses	8	15	1	3
Utterances	Imitation	7	2	3	5
	Linguistic mapping	58 (1.8)	124 (3.9)	13 (1.4)	49 (4.9)
	Recast & Expansion	11	46 (1.5)	5	17 (1.7)
	Self-talk	4	33 (1.0)	4	9
	Total	111 (3.5)	236 (7.4)	29 (3.1)	85 (8.3)
	Acting Silly-Exaggeration	0	8	1	6
	Aiding Child	0	18	4	10 (1.0)
Facilitating	Child's Level	1	0	2	0
Actions	Follow Child's Lead	17	78 (2.5)	10 (1.1)	37 (3.7)
	Imitation	0	2	0	3
	Model	2	12	0	3
	Musicality	1	23 (0.7)	0	1
	Seeking Assistance	0	0	0	0
	Switch Activity	2	35 (1.1)	7	0
	Total	23 (0.7)	176 (5.6)	24 (2.6)	60 (6.0)
Eliciting	Choice Question	3	17	6	1
Utterances	Open ended Question	9	0	3	2
	Playful Mislabel	0	2	0	0
	Seeks Clarification	1	2	0	7
	Total	13 (0.4)	21 (0.7)	9 (1.0)	10 (1.0)
	Control Access	2	47 (1.5)	3	9
Eliciting	Deliberate Ignoring	21	33 (1.0)	1	12 (1.2)
Actions	Gestural Prompt	11	3	0	2
	Inadequate portions	0	2	0	4
	Mixing up known routines	0	0	0	0
	Playful obstruction	1	18	3	2
	Requiring Assistance	0	4	0	0
	Waiting	63 (2.0)	42 (1.3)	19 (2.0)	15 (1.5)
	Total	98 (3.1)	149 (4.7)	26 (2.8)	44 (4.4)
Overall Communication		503 (16.0)	679(21.4)	152 (16.3)	221 (21.9)

Communication Style	Strategy	Maddie		Donna	
		Pre N. & R.	Post N.	Pre N.	Post N.
	Behaviour Control	76(2.5)	1	23 (2.3)	2
Behaviour	Command	81 (2.7)	-	46(4.6)	10 (1.0)
Directives	Blocking	3	-	7	3
	Nonverbal Command	128(4.2)	18 (1.8)	51(5.1)	10 (1.0)
	Removing	11	-	4	-
	Total	299 (9.9)	19 (1.9)	131 (13.1)	25(2.5)
Communication	Test question	19	-	1	0
Cues	Verbal Prompt	3	-	3	-
	Yes/No Q	20	2	11 (1.1)	1
	Total	42 (1.3)	2 (0.2)	15 (1.5)	1 (0.0)
	Social Comments	94(3.1)	-	41(4.1)	2
Facilitating	Fill in the pauses	-	-	1	-
Utterances	Imitation	-	5	-	2
	Linguistic mapping	81 (2.7)	28 (2.8)	25 (2.5)	49 (4.7)
	Recast & Expansion	-	-	-	-
	Self-talk	2	4	5	4
	Total	177 (5.9)	37(3.7)	72 (7.2)	57 (5.6)
	Acting Silly-Exaggeration	8	3	2	5
	Aiding Child	4	-	1	2
Facilitating	Child's Level	-	1	-	8
Actions	Follow Child's Lead	19	14(1.4)	33 (3.3)	18 (1.8)
	Imitation	-	-	2	1
	Model	2	-	21(2.1)	-
	Musicality	-	-	0	-
	Seeking Assistance	-	-	0	1
	Switch Activity	2	2	8	0
	Total	35 (1.1)	20 (2.0)	67 (6.7)	35(3.4)
Eliciting	Choice Question	-	-	-	-
Utterances	Open ended Question	-	-	-	-
	Playful Mislabel	-	-	-	-
	Seeks Clarification	-	-	-	-
	Total	0 (0.0)	0 (0.0)	0(0.0)	0(0.0)
	Control Access	3	-	7	3
Eliciting	Deliberate Ignoring	-	9 (0.9)	6	1
Actions	Gestural Prompt	4	2	-	-
	Inadequate portions	1	-	-	-
	Mixing up known routines	-	-	-	2
	Playful obstruction	-	-	-	-
	Requiring Assistance	-	-	-	1
	Waiting	21 (0.7)	20 (3.1)	18 (1.8)	17 (1.7)
	Total	29 (0.9)	31(3.1)	31 (3.1)	24 (2.4)
Overall Communication		582 (19.2)	109 (10.9)	316 (31.6)	142 (13.9)

Appendix 32: Rate of Adult Communication across Contexts, Pre- and Post-Professional Development

Pre Professional Development

	Shanbailey				Clonadoo				Windyvale				Bridgeport				Grindstone			
	T1	T2	T3	S	T1	T2	T3	S	T1	T2	T3	S	T1	T2	T3	S	T1	T2	T3	S
BC	3.5	4.0	5.8	6.7	5.4	4.2	3.7	5.9	7.5	10.7	5.4	9.4	3.5	2.7	5.2	3.2	13.0	6.4	10.3	13.1
CC	5.4	2.7	6.1	8.8	1.5	1.7	1.5	1.5	5.3	3.1	3.0	3.5	2.4	8.2	1.7	3.6	0.1	1.3	2.7	1.5
FU	3.6	3.6	4.1	3.2	4.2	1.2	2.4	3.7	1.3	0.7	3.3	4.2	5.0	2.8	3.1	3.1	7.5	5.2	4.9	7.2
FS	2.2	1.3	2.7	1.0	3.7	2.8	5.2	6.3	0.3	0.3	1.4	3.3	0.8	0.7	0.7	2.6	1.1	0.9	1.5	6.7
EU	1.3	1.4	1.1	0.0	0.0	0.0	0.4	0.1	0.4	0.8	2.4	0.5	0.8	0.2	0.3	1.0	0.0	0.0	0.0	0.0
ES	2.3	2.6	1.6	1.7	3.2	4.0	1.9	1.7	3.3	2.1	4.1	2.8	2.0	3.5	3.6	2.8	1.0	1.0	0.9	3.1

Post Professional Development

	Shanbailey				Clonadoo				Windyvale				Bridgeport				Grindstone			
	T1	T2	T3	S	T1	T2	T3	S	T1	T2	T3	S	T1	T2	T3	S	T1			S
BC	1.7	1.3	1.2	2.5	1.0	1.2	1.7	4.2	1.6	0.4	1.0	1.9	1.2	1.0	0.5	0.4	1.9			2.5
CC	2.6	1.5	1.9	4.4	1.7	1.3	1.4	0.7	2.0	2.4	2.3	1.6	2.8	2.7	1.0	1.8	0.2			0.0
FU	8.0	7.5	6.2	3.8	8.6	7.5	7.4	7.1	8.5	3.1	4.2	5.5	7.7	8.2	6.3	8.3	3.7			5.6
FS	5.1	5.0	5.2	6.6	8.9	9.3	9.0	7.9	5.9	6.9	8.7	9.4	4.6	6.2	5.2	6.0	2.0			3.4
EU	5.0	1.7	1.9	2.4	0.1	0.3	0.2	0.0	1.2	0.7	0.6	0.7	1.0	0.3	1.0	1.0	0.0			0.0
ES	5.1	6.0	3.4	3.0	6.1	4.7	5.0	2.7	2.9	5.4	5.2	4.3	6.1	4.0	4.6	4.4	3.1			2.4

T=Teacher; S=SNA 1=Interaction Session One; 2=Interaction Session Two; 3=Interaction Session Three

Adult Communication: BC=Behaviour Control; CC= Communication Cues; FU= Facilitative Utterances; FS=Facilitative Strategies.

Context: Brown= Academic Activity (AA); White= Solitary Activity (SA); Pink=Co-operative Activity (CA)

Appendix 33: Function of Pupil Behaviour Following Adults' Directive Communication

Pupil Behaviours that Followed Adults' Pre-PD Directive Communication					
Adult Directive Communication	Pupil Communication				
	No.	Compliance	Ignore	Protest	Other communication
Ella–Charlie Pre	232	38% (87)	45% (102)	7% (18)	Social Interaction 5% (Ack. (12), JA 0.5% (1) NSR 4.5% (11)
Ella–Charlie Post	78	41% (32)	22% (17)	4% (3)	NSR 5% (4); SI 24%-Ack. (14), RSR (5) JA 4% (3)
Nuala–Charlie Pre	112	54% (61)	42% (47)	3% (3)	NSR 1% (1)
Nuala–Charlie Post	47	36% (17)	45% (21)	4% (2)	SI 13% (Ack. (4) Im. (2) JA2% (GI (1))
Síofra–Freddy Pre	133	39% (52)	38% (51)	14% (19)	Social Interaction 8% (Ack. (7), Att. (2), TT, (1)) NSR 1% (1)
Síofra–Freddy Post	63	37% (23)	16% (10)	17% (11)	NSR 3% (2) SI 22% (Ack. (12), At (2)) JA 5% (Comm. (1) GI (2))
Sunita–Freddy Pre	49	60% (29)	20% (10)	10% (5)	Social Interaction 6% (Ack. (3) NSR. 4% (2)
Sunita–Freddy Post	28	39% (11)	11% (3)	36% (10)	SI 14% (Ack (3) RSR (1))
Yana–Elana Pre	276	43% (120)	34% (93)	13% (35)	Social Interaction 4% (Ack. (8), Att. (3)) NSR. 5% (14), JA. 1% (3)
Yana–Elana Post	74	24% (18)	18% (13)	4% (3)	NSR 9% (7) SI 42% (Ack (13) RSR (12) At (4) TT (2)) JA 3% (2)
Kim–Elana Pre	92	17% (16)	35% (32)	35% (34)	Social Interaction 5% (Ack. (3), Att. (2)) NSR.8% (7)
Kim–Elana Post	27	33% (9)	22% (6)	7.5% (2)	NSR 4% (1) SI (Ack 22% (6) At 7.5% (2) JA 4% (1)
Violet–Keeva Pre	236	36% (85)	40% (94)	7% (16)	Social Interaction 17% (Ack. (32) Im. (4) TT (3)), JA (1) NSR (1) n.236
Violet–Keeva Post	59	17% (10)	20% (12)	17% (10)	NSR 14% (8) SI 32% (Ack. (18) TT (1))
Heidi–Keeva Pre	52	42% (22)	27% (14)	11.5% (6)	Social Interaction 8% (Ack. (2) Im. (1) RSR (1)) NSR 11.5% (6) n.52
Heidi–Keeva Post	20	25% (5)	40% (8)	10% (2)	Social Interaction 25% (Ack. (5)
Maddie–Trevor Pre	215	62% (133)	22% (48)	3% (6)	Social Interaction 7% (Ack. (13), Im. (1) TT (2)) NSR. 5% (11), JA (1%) 1
Maddie–Trevor Post	21	48% (10)	4.5% (1)	4.5% (1)	Social Interaction 43% (Ack. (6) RSR (3))
Donna–Trevor Pre	85	59% (50)	21% (18)	*4% (2)	Social Interaction 14% (Ack. (10), Im. (1), Att. (1)), NSR.4% (3)
Donna–Trevor Post	17	52% (9)	12% (2)	18% (3)	NSR 6% (1) Social Interaction 12% (Ack. (1) RSR (1))

Appendix 34: Sequential Analysis of the Frequency (and Percentage) of Overall Style of Adult Communication subsequent to Pupil's "Ignoring" Behaviour

Teacher SNA	Shanbailey		Clonadoo		Windyvale		Bridgeport		Grindstone	
	Ella		Siofra		Yana		Violet		Maddie	
	Nuala		Sunita		Kim		Heidi		Donna	
	Pre-PD N.	Post-PD N.	Pre-PD N.	Post-PD N.	Pre-PD N.	Post-PD N.	Pre-PD N.	Post-PD N.	Pre-PD N.	Post-PD N.
Behaviour Control	20 12	4 8	8 3	2 1	22 8	2 3	17 3		27 16	
Command	25	4 4	5 3	3 3	9 6	1 2	28	1	25 7	1
Blocking	5	1	2 1	1 1	9		3		1 2	1 1
Nonverbal Command	6 5	1 1	26 6	9 1	18 2	1 1	3 1	3 1	30 17	8
Removing	1	5	3	1 1	5 1		3		1	
Total & %	57 (23%) 17 (23%)	15 (16%) 13 (22%)	44 (27%) 13 (32%)	9 (9%) 7 (21%)	63 (35%) 17 (28%)	4 (5%) 6 (21%)	54 (23%) 4 (8%)	3 (2%) 2 (5%)	83 (51%) 42 (57%)	12 (32%) 2 (29%)
Test question	24 25	1 4	3 1	1	28 1		5 4	4	12	
Verbal Prompt	12 10	6	5	7 1	4 4	1	47 1	7 4	0 2	
Yes/No Q	37 10	5 4	8 3	1	9 17	13 6	16 9	8	7 3	
Total & %	73 (30%) 45 (60%)	12 (13%) 12 (20%)	16 (10%) 4 (10%)	8 (8%) 2 (6%)	41 (22%) 22 (37%)	14 (17%) 6 (21%)	68 (28%) 14 (27%)	19 (15%) 4 (11%)	19 (12%) 5 (7%)	0 (0%) 0 (0%)
Social Comments	8	1	2 5	2 1	4 2	1 1	3	4	15 4	
Fill in the pauses	3 1	2 1	2	2			4	6 2		
Imitation	2	- 5		1 2		1				1
Linguistic mapping	19 8	8 5	15 2	19 4	3 2	4 1	34 5	28 7	23 3	2 2
Recast & Expansion		1		1		1	1	5 1		
Self-talk	12	11	1 1	6		5 2	3 2	8 1		1
Total & %	44 (18%) 9 (12%)	23 (25%) 11 (19%)	20 (12%) 8 (20%)	30 (32%) 8 (24%)	7 (4%) 5 (8%)	11 (13%) 4 (14%)	45 (19%) 8 (15%)	51 (40%) 17 (30%)	38 (23%) 7 (10%)	3 (12%) 2 (29%)

Teacher SNA	Shanbailey		Clonadoo		Windyvale		Bridgeport		Grindstone	
	Ella Nuala		Síofra Sunita		Yana Kim		Violet Heidi		Maddie Donna	
	Pre-PD N.	Post-PD N.	Pre-PD N.	Post-PD N.	Pre-PD N.	Post-PD N.	Pre-PD N.	Post-PD N.	Pre-PD N.	Post-PD N.
Acting Silly- Exaggeration		6		2		3			4	
Aiding Child	3	2	3	7	1	2	1		2	
Child's Level	1			1		5	1			1
Follow Child's Lead	3	3	10	8		2	4	2	1	1
	1	1	2	2			2	1	3	
Imitation	1	-	1			1				
		-	2	5		1		2	2	
Model	3	1	15	5		1		2	1	
		2	3	2					1	
Musicality				1			1			
				1						
Switch Activity	4	7	7	8	2	9	1	14		2
		3	5	2		2	3	2	4	
Seek Help								1		
Total & %	15 (6%) 1 (1%)	19 (20%) 6 (10%)	36 (22%) 12 (29%)	32 (34%) 12 (37%)	2 (1%) 4 (7%)	22 (27%) 5 (17%)	7 (3%) 6 (12%)	18 (14%) 5 (13%)	8 (6%) 9 (12%)	3 (12%) 1 (13%)
Choice Question	8	5						4		
		3					1			
Open ended Question	10	2			10	2	5			
		4			1	1	1			
Seeks Clarification	1	1			1		1			
		1				1		2		
Playful mislabel					1			1		
Total & %	19 (8%) 0 (0%)	8 (9%) 8 (14%)	0 0	0 0	12 (7%) 1 (2%)	2 (2%) 2 (6%)	6 (2%) 2 (4%)	5 (4%) 2 (6%)	0 (0%) 0 (0%)	0 (0%) 0 (0%)

Teacher SNA	Shanbailey		Clonadoo		Windyvale		Bridgeport		Grindstone	
	Ella Nuála		Síofra Súita		Yana Kim		Violet Heidi		Maddie Donna	
	Pre-PD N.	Post-PD N.	Pre-PD N.	Post-PD N.	Pre-PD N.	Post-PD N.	Pre-PD N.	Post-PD N.	Pre-PD N.	Post-PD N.
Control Access	2	5 4	9 1	3	2	7 3	3	7	2	
Deliberate Ignoring					2 1			1	1 1	1
Gestural Prompt		3		1		1	5	1	1	1
Inadequate portions								1		
Mixing up known routines		2	1					1		
Playful obstruction	2	2 2		1	1 1	2 1	1	3 1		
Waiting	34 3	4 3	38 3	12 3	53 9	19 2	50 18	17 12	12 7	10 1
Total & %	38 (15%) 3 (4%)	16 (17%) 9 (15%)	48 (29%) 4 (9%)	16 (17%) 4 (12%)	57 (31%) 11 (18%)	29 (36%) 6 (21%)	59 (25%) 18 (34%)	31 (25%) 13 (35%)	13 (8%) 10 (14%)	11 (44%) 2 (29%)
N. of NI behaviours with Teacher & SNA	Pre 246 75	Post 93 59	Pre 164 41	Post 95 33	Pre 182 60	Post 82 29	Pre 239 52	Post 127 37	Pre 162 73	Post 25 7

Appendix 35: Sequential Analysis-Frequency of Adult Communication Strategies used following Student Protest/Refusal Behaviours

Case	Shanbailey		Clonadoo		Windyvale		Bridgeport		Grindstone	
Teacher (Black font)	Ella (T)		Síofra (T)		Yana (T)		Violet (T)		Maddie (T)	
SNA (Red Font)	Nuala (SNA)		Sunita (SNA)		Kim (SNA)		Heidi (SNA)		Donna (SNA)	
	Pre N.	Post N.	Pre N.	Post N.	Pre N.	Post N.	Pre N.	Post N.	Pre N.	Post N.
Behaviour Control	6		2	1	22		2		3	
	1			1	11		3			
Command	9		3	1	5		10	1	3	
		1		3	9		1		3	
Blocking			1	1	14					
	1			3	1					
Nonverbal Command	3		4		5		3	1	2	
			2	1	6		1		2	3
Removing		1	4		1		2			
			2		1					
Total	18	1	14	3	47	0	17	2	8	0
	2	1	4	8	28	0	5	0	5	3
Test question		1			2				2	
	2									
Verbal Prompt	1	1								
	1	1								
Yes/No Q	6	2	1	1	1	1		3		
		2	1		4		3	2		
Total	7	3	1	1	3	1	0	3	2	0
	3	4	1	0	4	0	3	2	0	0
Social Comments	1	2	2		5		1	8		
			2	2	8	1				
Fill in the pauses		1	2							
				1						
Imitation						2				
				1			1			
Linguistic mapping			1			1	3	4	1	
					1					
Recast & Expansion	2						1			
Self-talk	1	1		1				2		
		1								
Total	4	4	3	1	5	3	4	14	1	0
	0	0	2	4	9	1	2	0	0	0

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Case	Shanbailey		Clonadoo		Windyvale		Bridgeport		Grindstone	
Teacher (Black font)	Ella (T)		Síofra (T)		Yana (T)		Violet (T)		Maddie (T)	
SNA (Red Font)	Nuala (SNA)		Sunita (SNA)		Kim (SNA)		Heidi (SNA)		Donna (SNA)	
	Pre N.	Post N.	Pre N.	Post N.	Pre N.	Post N.	Pre N.	Post N.	Pre N.	Post N.
Acting Silly- Exaggeration						1 1				1
Aiding Child				3	1	1				
Child's Level										
Follow Child's Lead		1 1	7 5	7 6	1 7	13 3	2 2	13 4		2
Imitation						1				
Model			1	1 0						
Musicality										
Switch Activity				1 2		1		1		
Seek Help										
Total	0 0	1 1	8 5	12 8	1 8	16 5	2 2	14 4	0 0	1 2
Choice Question		1						1		
Open ended Question	2					1	1 2 1			
Seeks Clarification	2	1 1				1	1			
Playful Mislabeling						2				
Total	4 0	1 2	0 0	0 0	0 3	2 0	2 2	1 0	0 0	0 0
Control Access								1 4		
Deliberate Ignoring					4					
Gestural Prompt										
Inadequate portions										
-Mixing up known routines										
Playful obstruction								1		
Waiting	1		2 1	0 1	6 3	1 0	3	0 1		
Total	1 0	0 0	2 1	0 1	6 9	1 2	3 0	5 2	0 0	0 0
Overall Total	Pre 34 5	Post 10 9	Pre 28 12	Post 17 21	Pre 62 61	Post 23 8	Pre 28 14	Post 46 8	Pre 11 5	Post 1 5

Appendix 36: Role, Function and Nature of Pupils' Speech x Frequency Shanbailey

Pre-Professional Development											
Ella & Charlie		Initiation				Response				Total	
Function		1-word	2-word	3-word	Vocalisation	1-word	2-word	3-word	Voc	I	R
Pre-PD	Protest	1	0	1	3	1	1	2	5	5	9
Session 1	RA	0	0	0	0	2	1	0	0	0	3
CA	Compliance	0	0	0	0	6	4	0	0	0	10
N.33	SI	0	0	0	0	0	0	1	0	0	1
*1 NI	JA	0	0	0	0	1	1	2	0	0	4
1-Cry											
Total		1	0	1	3	10	7	5	5	5	27
Pre-PD	Protest	0	0	0	0	1	1	3	2	0	7
Session 2	RA	0	0	1	0	2	1	0	0	1	3
SA	Compliance	0	0	0	0	2	2	5	0	0	9
N.25	SI	0	0	0	0	0	1	0	0	0	1
*1 NI	JA	0	0	0	0	2	0	1	0	0	3
1-Cry											
Total		0	0	1	0	7	5	9	2	1	23
Pre-PD	Protest	0	0	0	0	0	0	0	0	0	0
Session 3	RA	0	0	0	0	1	2	0	0	0	3
SA	Compliance	0	0	0	0	12	6	1	5	0	24
N.29	SI	0	0	0	0	0	0	0	0	0	0
	JA	0	0	1	0	0	1	0	0	1	1
Total		0	0	1	0	13	9	1	5	1	28
Total Interactive Speech n.85		1	0	3	3	30	21	15	12	7	78

*2 utterances in total were Non-Interactive (2 vocalisations) Rate= 87/30.1=2.9

RA= Request Action SI = Social Interaction JA = Joint Attention

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

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Nuala & Charlie						Response				Total	
Function		1-word	2-word	3-word	Voc	1-word	2-word	3-word	Voc	I	R
Baseline	Protest	1	0	0	0	0	0	2	0	1	2
AA	RA	0	0	0	0	0	0	0	0	0	0
N.48	Compliance	0	0	0	0	18	6	20	0	0	44
	SI	0	0	1	0	0	0	0	0	1	0
	JA	0	0	0	0	0	0	0	0	0	0
Total n.48		1	0	1	0	18	6	22	0	2	46

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Post Professional Development											
Ella & Charlie		Initiation				Response				Total	
	Function	1-word	2-word	3-word	Voc	1-word	2-word	3-word	Voc	I	R
Post-PD Session 1 CA N.56	Protest			3		1				3	1
	RA	1	1	6						8	0
	Compliance					3	4	1		0	8
	Ack.					1	2			0	3
	RSR	4		1		1				5	1
	Attention				1					1	0
	Turn-take	2				1				2	1
	Imitation					3		1		0	4
	Give Info.			4			1	2		4	3
	Comment		2			3	4		2	2	9
	Seek Info			1						1	0
	Total	7	3	15	1	13	11	4	2	26	30
Post-PD Session 2 CA N.38	Protest					1				0	1
	RA			4				1		4	1
	Compliance					2	1			0	3
	Ack.			1		1	1			1	2
	RSR	2					1			2	1
	Attention	1								1	0
	Give Info		1	1		1	3	5		2	9
	Comment	2		1	2	1	1		4	5	6
	Total	5	1	7	2	6	7	6	4	15	23
Post-PD Session 3 CA N.40	Protest									0	0
	RA						2			0	2
	Compliance					4	2	1		0	7
	Ack.						1			0	1
	RSR	2		5		2				7	2
	Give Info.		1	2		4	7	5		3	16
	Comment	1		1						2	0
	Total	3	1	8	0	10	12	6	0	12	28
Total Interactive Speech n.134		15	5	30	3	29	30	16	6	53	81

Rate= 134/29.9= 4.5

Ack. = Acknowledge RSR = Request Social Routine:

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Nuala & Charlie		Initiation				Response				Total	
	Function	1-word	2-word	3-word	Voc	1-word	2-word	3-word	Voc	I	R
Post-PD CA N.52	Protest	1					2	1	1	1	4
	Compliance					12	2	3		0	17
	Ack.					2				0	2
	RSR	1								1	0
	Attention							1		0	1
	Imitation					1	1			0	2
	Give Info	1	2			13	6			3	19
	Comment	1	1							2	0
	Total n.52	4	3	0	0	28	11	5	1	7	45

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Clonadoo

Pre-Professional Development											
Síoira & Freddy		Initiation				Response				Total	
Function		1-word	2-word	3-word	Vocalisation	1-word	2-word	3-word	Voc	I	R
Pre-PD	Protest	0	0	0	0	0	0	0	0	0	0
Session 1	RA	1	0	0	0	0	0	0	0	1	0
SA	Compliance	0	0	0	0	0	0	0	0	0	0
N. 3	SI	0	0	0	0	2	0	0	0	0	2
	JA	0	0	0	0	0	0	0	0	0	0
	Total	1	0	0	0	2	0	0	0	1	2
Pre-PD	Protest	0	0	0	0	1	0	0	0	0	1
Session 2	RA	1	0	0	0	0	0	0	0	1	0
SA	Compliance	0	0	0	0	0	0	0	0	0	0
N.2	SI	0	0	0	0	0	0	0	0	0	0
	JA	0	0	0	0	0	0	0	0	0	0
	Total	1	0	0	0	1	0	0	0	1	1
Pre-PD	Protest	0	0	0	0	0	0	0	0	0	0
Session 3	RA	0	0	0	0	0	0	0	0	0	0
CA	Compliance	0	0	0	0	3	0	0	0	0	3
N. 9	SI	0	0	4	0	0	0	0	0	4	0
	JA	0	0	0	1	0	0	0	1	1	1
	Total	0	0	4	1	3	0	0	1	5	4
Total Interactive Speech n.14		2	0	4	1	6	0	0	1	7	7

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Sunita & Freddy		Initiation				Response				Total	
Function		1-word	2-word	3-word	Voc	1-word	2-word	3-word	Voc	I	R
Baseline	Protest	0	0	0	0	1	0	0	0	0	1
CA	RA	0	0	0	0	0	0	0	0	0	0
N.2	Compliance	0	0	0	0	0	0	0	0	0	0
	SI	0	0	0	0	0	0	0	0	0	0
	JA	0	0	0	0	1	0	0	0	0	1
	Total n.2	0	0	0	0	2	0	0	0	0	2

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Post Professional Development											
Síofra & Freddy		Initiation				Response				Total	
	Function	1-word	2-word	3-word	Voc	1-word	2-word	3-word	Voc	I	R
Post-PD	Protest									0	0
Session 1	RA	4								4	0
CA	Compliance					4	1	3		0	8
N.38	Ack.							1		0	1
* 1NI	RSR	1		4						5	0
2-word	Attention			1	4				1	5	1
	Turn-taking				1					1	0
	Imitation					8		1		0	9
	Give Info					1				0	1
	Comment	1	1							2	0
	Total	6	1	5	5	13	1	5	1	17	20
Post-PD	Protest									0	0
Session 2	RA									0	0
CA	Compliance					1	4	1		0	6
N. 49	Ack.								1	0	1
*1NI	RSR	1	2	4	1	2		2		8	4
2-word	Attention	1		4						5	0
	Turn-taking									0	0
	Imitation					7	1	2	1	0	11
	Give Info	4		1		2				5	2
	Comment	3		2	1					6	0
	Total	9	2	11	2	12	5	5	2	24	24
Post-PD	Protest									0	0
Session 3	RA	1		1				1		2	1
CA	Compliance					6	1			0	7
N.62	Ack.									0	0
*2NI	RSR	21	2	2			1			24	1
3-word	Attention		1	1						2	0
3-word	Turn-taking									0	0
	Imitation					9				0	9
	Give Info	2	2	1		1				5	1
	Comment	4	1	1		1			1	6	2
	Total	27	6	6	0	17	2	1	1	39	21
Total Interactive Speech n.145		42	10	22	7	42	7	11	4	80	65

*4 utterances in total were NI (2 -2word and 2 3-word)

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Sunita & Freddy		Initiation				Response				Total	
	Function	1-word	2-word	3-word	Voc	1-word	2-word	3-word	Voc	I	R
Post-PD	Protest						1		1	0	2
SA	RA									0	0
N.22	Compliance							1		0	1
*2NI	Ack.									0	0
Vocal.	RSR				8					8	0
Vocal.	Attention			1						1	0
	Turn-taking								1	0	1
	Imitation					3			2	0	5
	Give Info							1		0	1
	Comment	1								1	0
	Total n.20	1	0	1	8	3	1	2	4	10	10

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Windyvale

Pre-Professional Development											
Yana & Elana		Initiation				Response				Total	
	Function	1-word	2-word	3-word	Vocalisation	1-word	2-word	3-word	Voc	I	R
Pre-PD	Protest	1	0	3	1	1	1	1	0	5	3
Session 1	RA	0	0	0	0	0	0	0	0	0	0
AA	Compliance	0	0	0	0	12	2	0	0	0	14
N.38	SI	0	0	0	1	0	0	0	0	1	0
*9 NI	JA	3	2	0	0	0	1	0	0	5	1
3-1W											
3-2W											
3-V Cry											
Total		4	2	3	2	13	4	1	0	11	18
Pre-PD	Protest	0	0	1	3	0	0	0	0	4	0
Session 2	RA	1	2	1	0	0	0	0	0	4	0
AA	Compliance	0	0	0	0	3	0	0	0	0	3
N.23	SI	0	0	0	2	1	0	0	0	2	1
*8 NI	JA	1	0	0	0	0	0	0	0	1	0
8-V											
Total		2	2	2	5	4	0	0	0	11	4
Pre-PD	Protest	0	0	0	0	0	1	0	0	0	1
Session 3	RA	2	5	2	0	3	6	1	0	9	10
CA	Compliance	0	0	0	0	14	5	4	0	0	23
N.29	SI	0	0	0	1	7	2	2	0	1	11
*3 NI	JA	0	1	0	0	4	10	1	0	1	15
1-1W											
2-V											
Total		2	6	2	1	28	24	8	0	11	60
Total Interactive Speech n.115		8	10	7	8	45	28	9	0	33	82

Rate= 134/29.9= 4.5 Ack. = Acknowledge RSR = Request Social Routine:

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities *20 utterances in total were

NI (4-1word, 3-2word and 13 vocalisations)

Kim & Elana		Initiation				Response				Total	
	Function	1-word	2-word	3-word	Voc	1-word	2-word	3-word	Voc	I	R
Baseline	Protest	1	1	1	0	10	7	2	12	3	31
SA	RA	5	4	13	0	0	1	2	0	22	3
N.80	Compliance	0	0	0	0	0	2	3	0	0	5
	SI	0	0	0	0	0	0	0	0	0	0
	JA	0	1	2	0	1	2	0	0	3	3
Total n.70		6	6	16	0	11	12	7	12	28	42

*10 utterances were NI (2-1word, 1-2word 1-3word and 6 vocalisations)

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Post Professional Development											
Yana & Elana		Initiation				Response				Total	
	Function	1-word	2-word	3-word	Voc	1-word	2-word	3-word	Voc	I	R
Post-PD Session 1 CA N.55	Protest									0	0
	RA					1	2	2		0	5
	Compliance					4	1			0	5
	Ack.						2	1		0	3
	RSR	2	7					2		9	2
	Attention				2					2	0
	Turn-take					1				0	1
	Imitation					3	3			0	6
	Give Info	3	1	1			3			5	3
	Comment	4	3	1	1	1			4	9	5
	Total	9	11	2	3	10	11	5	4	25	30
Post-PD Session 2 SA N.25 *1-NI 3word	Protest									0	0
	RA			2						2	0
	Compliance					2				0	2
	Ack.									0	0
	RSR	1				2				1	2
	Attention		1						1	1	1
	Turn-take									0	0
	Imitation					3				0	3
	Give Info					2		1		0	3
	Comment	2	1	1	3		0		2	7	2
	Total	3	2	3	3	9	0	1	3	11	13
Post-PD Session 3 CA N.63 *1 NI 3-word	Protest						2	1		0	3
	RA	4	4					1		8	1
	Compliance					2				0	2
	Ack.								1	0	1
	RSR	10	10	3		4	1			23	5
	Attention								1	0	1
	Turn-take									0	0
	Imitation					2	1			0	3
	Give Info	2		1						3	0
	Comment	1	1		2	1	1		6	4	8
-	Total	17	15	4	2	9	5	2	8	38	24
Total Interactive Speech n.134		29	28	9	8	28	16	8	15	74	67

*2 utterances were NI (1-3word and 1 vocalisation)

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Post Professional Development											
Kim & Elana		Initiation				Response				Total	
	Function	1-word	2-word	3-word	Voc	1-word	2-word	3-word	Voc	I	R
Post-PD CA N.52	Protest						2			0	2
	RA		3	1		2				4	2
	Compliance					3				0	3
	Ack.									0	0
	RSR		6			2	3		1	6	6
	Attention		1	1	2					4	0
	Turn-take									0	0
	Imitation					1		1	1	0	3
	Give Info		2	1			1	2		3	3
	Comment								2	0	2
	Total n.38	0	12	3	2	8	6	3	4	17	21

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Bridgeport

Pre-Professional Development											
Violet & Keeva		Initiation				Response				Total	
	Function	1-word	2-word	3-word	Vocalisation	1-word	2-word	3-word	Voc	I	R
Pre-PD	Protest	0	0	0	1	2	0	0	5	1	7
Session 1	RA	0	0	1	0	2	0	0	0	1	2
SA	Compliance	0	0	0	0	0	1	1	0	0	2
N. 21	SI	0	0	0	0	3	1	0	0	0	4
*4 NI	JA	0	0	0	0	0	0	0	0	0	0
4-Cry											
Total		0	0	1	1	7	2	1	5	2	15
Pre-PD	Protest	0	0	0	0	0	0	0	0	0	0
Session 2	RA	0	1	0	0	0	0	0	0	1	0
CA	Compliance	0	0	0	0	37	1	0	3	0	41
N.80	SI	4	1	2	0	11	9	2	0	7	22
*5NI	JA	0	1	0	0	3	0	0	0	1	3
3-1W											
2-V											
Total		4	3	2	0	51	10	2	3	9	66
Pre-PD	Protest	0	0	0	2	0	0	0	5	2	5
Session 3	RA	0	0	0	0	1	0	0	0	0	1
AA	Compliance	0	0	0	0	18	1	0	1	0	20
N.44	SI	2	0	0	0	7	0	0	0	2	7
*5NI	JA	0	1	0	0	0	1	0	0	1	1
3-1W											
2-Cry											
Total		2	1	0	2	26	2	0	6	5	34
Total Interactive Speech n.131		6	4	3	3	84	14	3	14	16	115

*14 utterances were NI (6-1word and 8 vocalisations)

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Heidi & Keeva		Initiation				Response				Total	
	Function	1-word	2-word	3-word	Voc	1-word	2-word	3-word	Voc	I	R
Baseline	Protest	0	0	0	0	2	0	0	5	0	7
SA	RA	3	1	1	0	3	0	0	0	5	3
N.42	Compliance	0	0	0	0	10	1	0	0	0	11
	SI	1	0	0	0	8	1	0	1	1	10
	JA	0	0	0	0	1	0	0	0	0	1
Total n.38		4	1	1	0	24	2	0	6	6	32

*4 utterances were NI (3-1word and 1 vocalisation)

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Post Professional Development											
Violet & Keeva		Initiation				Response				Total	
	Function	1-word	2-word	3-word	Voc	1-word	2-word	3-word	Voc	I	R
Post-PD Session 1 SA N.36	Protest									0	0
	RA	10	1	2		4	3			13	7
	Compliance					4	1			0	5
	Ack.					2				0	2
	RSR									0	0
	Attention									0	0
	Turn-taking									0	0
	Imitation					3				0	3
	Give Info	2				3				2	3
	Comment	1								1	0
Total		13	1	2	0	16	4	0	0	16	20
Post-PD Session 2 CA N.68	Protest					5	1		1	0	7
	RA	18	6	3		5		2	1	27	8
	Compliance					6	1			0	7
	Ack.									0	0
	RSR									0	0
	Attention									0	0
	Turn-taking					5			1	0	6
	Imitation					5	1			0	6
	Give Info					3	1	1		0	5
	Comment	1	1							2	0
Total		19	7	3	0	29	4	3	3	29	39
Post-PD Session 3 SA N.36	Protest					3			1	0	4
	RA	6	4	3			1	2		13	3
	Compliance					1				0	1
	Ack.					1			2	0	3
	RSR									0	0
	Attention	1								1	0
	Turn-taking									0	0
	Imitation									0	0
	Give Info			3		2	1	4		3	7
	Comment		1							1	0
Total		7	5	6	0	7	2	6	3	18	18
Total Interactive Speech n.140		39	13	11	0	52	10	9	6	63	77

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Heidi & Keeva		Initiation				Response				Total	
	Function	1-word	2-word	3-word	Voc	1-word	2-word	3-word	Voc	I	R
Post-PD SA N.52	Protest									0	0
	RA	17	4	1		2				22	2
	Compliance					1	3			0	4
	Ack.					3	1			0	4
	RSR		1							1	0
	Attention									0	0
	Turn-taking									0	0
	Imitation					3				0	3
	Give Info	3	2	2		2	2	5		7	9
	Comment									0	0
Total n.52		20	7	3		11	6	5		30	22

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Grindstone

Pre-Professional Development											
Maddi & Trevor		Initiation				Response				Total	
Function		1-word	2-word	3-word	Vocalisation	1-word	2-word	3-word	Voc	I	R
Pre-PD	Protest	0	0	0	0	0	0	0	0	0	0
Session 1	RA	0	0	0	0	0	0	0	0	0	0
AA	Compliance	0	0	0	0	0	0	0	0	0	0
N.1	SI	0	0	0	0	0	0	0	1	0	1
	JA	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	1	0	1
Pre-PD	Protest	0	0	0	0	0	0	0	1	0	1
Session 2	RA	0	0	0	0	0	0	0	0	0	0
SA	Compliance	0	0	0	0	0	0	0	0	0	0
N.3	SI	0	0	0	0	0	0	0	2	0	2
	JA	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	3	0	3
Pre-PD	Protest	0	0	0	0	0	0	0	0	0	0
Session 3	RA	0	0	0	0	0	0	0	0	0	0
SA	Compliance	0	0	0	0	0	0	0	0	0	0
N.2	SI	0	0	0	0	0	0	0	0	0	0
*2NI	JA	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0	0	0
Total Interactive Speech n. 4		0	0	0	0	0	0	0	4	0	4

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Donna & Trevor		Initiation				Response				Total	
Function		1-word	2-word	3-word	Voc	1-word	2-word	3-word	Voc	I	R
Baseline	Protest	0	0	0	1	0	0	0	3	1	3
SA	RA	0	0	0	0	1	0	0	0	0	0
N.4	Compliance	0	0	0	0	0	0	0	0	0	0
	SI	0	0	0	0	0	0	0	0	0	0
	JA	0	0	0	0	0	0	0	0	0	0
Total 7 – 4 vocalisations and 3 signs		0	0	0	1	0	0	0	3	1	3

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Donna & Trevor		Initiation				Response				Total	
Function		1-word	2-word	3-word	Voc	1-word	2-word	3-word	Voc	I	R
Post-PD	Protest	0	0	0	2	0	0	0	1	2	1
SA	RA	0	0	0	0	0	0	0	0	0	0
N.15	Compliance	0	0	0	0	0	0	0	0	0	0
	RSR	0								0	0
	Acknowledge	0	0	0	0	0	0	0	1	0	1
	Attention	0	0	0	3	0	0	0	0	3	0
	JA	0	0	0	0	0	0	0	8	0	8
Total n.15		0	0	0	5	0	0	0	5	5	10

CA= Co-operative Activities SA= Solitary Activities AA= Academic Activities

Appendix 37a: Sequential Analysis - Adult Communication and Frequency and Nature of Subsequent Pupil Speech (Shanbailey)

Shanbailey											
Adult Communication		Pupil Subsequent Utterances									
Teacher Ella = Black		1 word		2 Word		3 Word		Vocalisation		Total	
SNA Nuala = Red		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Behaviour Directives	Behaviour	0		1		1		2		4	0
	Control	2	1	2						4	1
	Command	2	1	3		7	1	2	1	14	0
	Blocking	3		1				1		5	0
	Non-verbal	1			3	1	1			2	4
	Command	5		1		9				15	0
	Removing										
Total		6	0	5	3	9	1	5	0	25	4
		8	2	3	0	11	1	0	0	21	3
Communication Cues	Test question	6	3	5	2		4	3		14	9
		7	2	2	1	3	2		1	12	6
	Verbal Prompt	8	5	1	3		1	1		10	9
		2	10	1		6				10	10
Facilitating Utterances	Yes/No Q	4	3	6	4	3	1	5		18	8
						2				2	0
	Total	18	11	12	9	3	6	9	0	42	26
		9	12	3	1	11	2	0	1	24	16
Facilitating Utterances	Social Comments		1		1		3		1	0	6
						1				1	0
	Fill in the pauses		1							0	1
	Imitation				1					0	1
										0	0
	Linguistic mapping	1	4	1	1		3	1	1	3	9
			1							0	1
Facilitating Utterances	Recast & Expansion					2	2			2	2
					1					0	1
	Self-talk		2		5		3		1	0	11
			1							0	1
Total		1	8	1	8	2	11	1	3	5	3
		0	2	0	1	1	0	0	0	1	3

Facilitating Strategies	Acting Silly-Exaggeration	8	2	3	3	0	16				
	Aiding Child					0	1				
	Child's Level										
	Follow Child's Lead	1		2		0	3				
	Imitation			1		0	1				
	Model	1		1	2	2	2				
	Musicality	7	2			0	9				
	Switch Activity	1	1			0	0				
						0	1				
	Total	0	11	0	2	0	7	2	3	2	23
	0	8	0	3	0	1	0	0	0	12	
Eliciting Utterances	Choice Question	3	3	1	8	1	1	5	12		
	Open ended Question	1		2	1	2	2	1	5	3	
	Seeks Clarification	0	2		2		1	0	3		
	Playful Mislabelling				3			0	5		
						1		0	1		
Total	4	3	3	10	3	5	0	1	10	19	
	0	4	0	7	0	0	0	0	0	11	
Eliciting Strategies	Control Access	4		1	1	4		1	9		
	Deliberate Ignoring	3				10		0	4		
	Gestural Prompt	3		1		1		0	10		
	Inadequate portion							0	5		
	Playful Obstruction	1				1		0	1		
	Seeks Assistance		1					0	1		
	Waiting	2		1		1		2	2		
		2						2	0		
	Total	2	11	0	3	1	16	0	2	3	32
		2	4	0	2	0	1	0	0	2	7
Overall Total		31	44	21	35	18	46	17	9	87	134
		19	32	6	14	23	5	0	1	48	52

Appendix 37b: Sequential Analysis - Adult Communication and Frequency and Nature of Subsequent Pupil Speech (Clonadoo)

Clonadoo											
Adult Communication		Pupil Subsequent Utterances									
Teacher Síofra = Black		1 word		2 Word		3 Word		Vocalisation		Total	
SNA Sunita = Red		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Behaviour Directives	Behaviour Control						1				1
	Command		1		1		1		1		4
					1					2	
	Blocking	1								1	
	Non-verbal Command		2				5			2	5
										2	
	Removing	1					1			1	1
	Total	3	1		1		7		1	3	10
		1			1		1		3	1	5
Communication Cues	Test question		1								1
	Verbal Prompt	2	9		5					2	14
	Yes/No Q		2		1		1				4
			1							1	
	Total	2	12		6		1		0	2	19
			1							1	
Facilitating Utterances	Social Comments		1				1				2
	Fill in the pauses		1								1
	Imitation		1		1					2	2
										2	
	Linguistic mapping	2	17		5		5		1	2	28
		1	2					1	1	1	3
	Recast & Expansion		3								3
			1							1	
	Self-talk		2					2	1		5
	Total	1	25		6		8		2	2	41
		1	3				1		2	1	6

Facilitating Strategies	Acting Silly-Exaggeration	1									1
	Aiding Child	1						1			2
	Child's Level	1									1
	Follow Child's Lead	1	24			7		1		1	32
	Imitation	1		1		1		1		2	3
	Model	1		1	4	3		1	1	3	6
	Musicality			1		2					3
	Switch Activity	1	3		1	1		1	1	2	6
											2
	Total	2	32		4	4	14	2	4	8	54
											8
Eliciting Utterances	Choice Question	2									2
	Open ended Question	1									1
	Seeks Clarification			1							1
	Playful Mislabelling										
	Total	3		1							4
Eliciting Strategies	Control Access	1		1		3			3		8
	Deliberate Ignoring	2		1		1					4
	Gestural Prompt										
	Inadequate portion										
	Playful Obstruction										
	Seeks Assistance										
	Waiting		7			1		2			10
						1		1			2
Total			10		2		5		5		22
						1		1			2
Overall Total		8	83	0	20	4	35	2	12	14	150
										2	22

*

Appendix 37c: Sequential Analysis - Adult Communication and Frequency and Nature of Subsequent Pupil Speech (Windyvale)

*

Windyvale											
	Adult Communication	Pupil Subsequent Utterances									
		1 word		2 Word		3 Word		Vocalisation		Total	
		Teacher Yana = Black									
		SNA Kim = Red									
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Behaviour Directives	Behaviour Control	2		2		1		6		11	0
		1		3		1	1	4		9	1
	Command			4		2		1		7	0
		3		3	1	9		3		18	1
	Blocking	4	1	4				2		10	1
							1	1		1	1
	Non-verbal Command	12		3		4		5		24	0
Communication Cues		3		1		1		3		8	0
	Removing	1		1				1		3	0
				1				1		2	0
	Total	19	1	14	0	7	0	15	0	55	1
		7	0	8	1	11	2	12	0	38	3
	Test question	11		1	1	3	2	2		17	3
										0	0
Facilitating Utterances	Verbal Prompt	3	5	1						4	5
			3							0	3
	Yes/No Q	3	12	5	5		1	1	1	9	19
		7		1	1	1		1		10	1
	Total	17	17	7	6	3	3	3	1	30	27
		7	3	1	1	1	0	1	0	10	4
	Social Comments	2	2	2	2		1		1	4	6
Facilitating Utterances		2			1	4		2		8	1
	Fill in the pauses									0	0
										0	0
	Imitation		3		4					0	7
							1			0	1
	Linguistic mapping	2	3		5	1			2	3	10
				1	2				1	1	3
Facilitating Utterances	Recast & Expansion	3	1			2				5	1
										0	0
	Self-talk		7		3		1		1	0	12
			1	1						1	1
	Total	7	16	2	14	3	2	0	4	12	36
		2	1	2	3	4	1	2	1	10	6

Facilitating Strategies	Acting Silly-Exaggeration	JL	1		4		3		5	0	13
					4				3	0	7
	Aiding Child	1		2					1	0	0
										3	1
	Child's Level						1			0	1
										0	0
	Follow Child's Lead	1	4	1	3	0	2	1	10	3	19
		1		1	3	2	2	1		5	5
	Imitation									0	0
Eliciting Utterances	Model		1						1	0	2
										0	0
	Musicality									0	0
										0	0
	Switch Activity		1				1			0	2
										0	0
	Total	1	7	1	7	0	7	1	16	3	37
		2	0	3	7	2	2	1	4	8	13
Eliciting Strategies	Choice Question	1	2	2	2	1				4	4
										0	0
	Open ended Question	5	2	3	2		2	1		8	6
					1	2				2	2
	Seeks Clarification	1		3	1		2			4	3
				2						2	0
	Playful Mislabelling									0	0
										0	0
	Total	7	4	8	5	1	4	0	0	16	13
Eliciting Strategies		0	0	2	1	2	1	0	0	4	2
	Control Access	1	4	2	5		1		1	3	11
			2		3	1				1	5
	Deliberate Ignoring	1	4	4	3		1		1	5	8
					1	1				1	1
	Gestural Prompt				1					0	1
										0	0
	Inadequate portion		2							0	0
										0	2
Eliciting Strategies	Playful Obstruction			1				1	1	0	0
										2	1
	Seeks Assistance		1							0	1
										0	0
	Waiting	4	2	3	3	2	2	2	1	11	8
		1		2	1	2		1		6	1
	Total	6	11	9	12	2	4	2	2	19	29
		1	4	3	5	4	0	2	1	10	10
Overall Total		57	56	41	44	16	19	21	24	135	143
		19	8	19	18	24	6	18	6	80	38

Appendix 37d: Sequential Analysis - Adult Communication and Frequency and Nature of Subsequent Pupil Speech (Bridgeport)

Bridgeport											
Adult Communication		Pupil Subsequent Utterances									
Teacher Violet = Black		1 word		2 Word		3 Word		Vocalisation		Total	
SNA Heidi = Red		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Behaviour Directives	Behaviour Control	1						1		2	0
		3						2		5	0
	Command	22		2		2		10		36	0
		2								2	0
	Blocking	3								3	0
	Non-verbal Command	1		1				2		4	0
		1						1		2	0
	Removing		1	2					1	2	2
										0	0
	Total	26	1	5	0	2	0	13	1	46	2
		9	0	0	0	0	0	3	0	12	0
Communication Cues	Test question		2		1	0		1		0	4
		1				1		1		3	0
	Verbal Prompt	42	3	7		4		2	1	55	4
		3	2		2					3	4
	Yes/No Q	1	14		2			1	1	2	17
		8	1	2	1			1		11	2
	Total	43	19	7	3	4	1	3	2	57	25
		12	3	2	3	1	0	2	0	17	6
Facilitating Utterances	Social Comments	4			1			1		5	1
		1	1							1	1
	Fill in the pauses	1								1	0
										0	0
	Imitation				1			1		1	1
	Linguistic mapping	7	7	1	1			1		9	8
		2	6		1		1			2	8
	Recast & Expansion	3	8		1		1		1	3	11
			5	1			1			1	6
	Self-talk								2	2	0
	Total	15	15	1	3	0	1	2	3	18	22
		3	12	1	2	0	2	1	0	5	16

Facilitating Strategies	Acting Silly-Exaggeration	1												2	0	3
							1								0	1
	Aiding Child		0												1	0
	Child's Level		1												0	0
	Follow Child's Lead	2	3				3				1				2	7
			1	5											1	5
	Imitation			1											0	1
															0	0
	Model			1	1						1			1	1	3
														0	0	
Musicality			2				1							0	3	
														0	0	
Switch Activity			4										1	1	4	
		1												1	0	
Total	2	12	1	5	0	2	1	3						4	22	
	3	5	0	1	0	0	1	0						4	6	
Eliciting Utterances	Choice Question	1	3				4			1				1	8	
			2	1										2	1	
	Open ended Question				1									1	0	
							1			1				2	0	
	Seeks Clarification		1											2	1	
			3			1								0	6	
Playful Mislabelling																
Total	1	4	1	4	0	1	0	0						2	9	
	2	4	0	2	0	3	0	0						2	9	
Eliciting Strategies	Control Access	4	14	1	3					7					5	24
			1	1											1	1
	Deliberate Ignoring		11		2		4			4			1	0	18	
				2						3				0	9	
	Gestural Prompt	3	1			1						1		4	2	
				1										0	1	
	Inadequate portion			1										0	1	
				1										0	1	
	Playful Obstruction		1			1				2				0	4	
														0	1	
Seeks Assistance		1			1							1	1	2		
													0	0		
Waiting	3	7	1		1				2	4			8	9		
		1	3										1	3		
Total	11	35	2	8	0	15	5	2					18	60		
	2	8	0	4	0	3	0	0					2	15		
Overall Total		98	86	18	23	6	20	24	11					145	140	
		31	32	3	12	1	8	7	0					42	52	

Appendix 37e: Sequential Analysis - Adult Communication and Frequency and Nature of Subsequent Pupil Speech (Grindstone)

Grindstone											
Adult Communication		Pupil Subsequent Utterances									
		I-word		2-Word		3-Word		Vocalisation		Total	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Behaviour Directives	Teacher Maddie = Black										
	SNA Donna = Red										
	Behaviour Control										
	Command							1		1	
	Blocking							1		1	
	Non-verbal Command								2		2
Communication Cues	Removing							3	3	3	3
	Total							2	2	2	2
								4	4	4	4
	Test question							1		1	
	Verbal Prompt										
	Yes/No Q								1		1
Facilitating Utterances	Total							1	1	1	1
								0	0	0	0
	Social Comments										
	Fill in the pauses										
	Imitation										
	Linguistic mapping							2	5	2	5
Facilitating Utterances	Recast & Expansion										
	Self-talk							1		1	
	Total							3	5	3	5
								0	5	0	5

Facilitating Strategies	Acting Silly-Exaggeration							2		2
	Aiding Child									
	Child's Level									
	Follow Child's Lead							1 3	1 3	
	Imitation							1	1	
	Model									
	Musicality									
	Switch Activity									
	Total						0 0	3 4	0 0	3 4
Eliciting Utterances	Choice Question									
	Open ended Question									
	Seeks Clarification									
Eliciting Strategies	Playful Mislabelling									
	Total						0 0	0 0	0 0	0 0
Eliciting Strategies	Control Access									
	Deliberate Ignoring							3	3	
	Gestural Prompt									
	Inadequate portion									
	Playful Obstruction									
	Seeks Assistance									
	Waiting							2 2	2 2	
	Total						0 0	5 2	0 0	5 2
Overall Total							6 4	16 15	6 4	16 15

Appendix 38: Frequency & Function of Students' Nonverbal & Verbal Communication

		Shanbailey		Ella (Teacher)		Nuala (SNA)			
Function		Pre		Post		Pre		Post	
		NV*	V#	NV	V	NV	V	NV	V
Behaviour Regulation	Compliance	60	43	24	18	25	44	9	17
	Ignore	248	2	93	0	75	0	58	1
	Refusals/Protests	11	21	5	5	2	3	4	5
	Non-Social Request	13	10	59	15	4	0	8	0
Social Interaction	Acknowledge	66	0	232	7	5	0	49	2
	Imitation	0	2	3	4	0	0	6	2
	Request Social Routine	0	0	26	18	0	0	1	1
	Show off/Attention	1	0	9	2	0	1	17	0
	Turn Taking	4	0	12	3	0	0	0	0
Joint Attention	Give Information	0	8	8	38	1	0	6	22
	Comment	0	1	2	24	0	0	0	2
	Seek Information	0	0	1	0	0	0	0	0
Total		403	87	474	134	112	48	158	52
	Total Behaviours	490		608		160		210	
	Interactive behaviours	242 (r.8.0)		515 (r.17.2)		85 (8.5)		151 (15.1)	

*NV= nonverbal; #V= verbal

		Clonadoo		Siofra (Teacher)		Sunita (SNA)			
Function		Pre		Post		Pre		Post	
		NV*	V#	NV	V	NV	V	NV	V
Behaviour Regulation	Compliance	61	3	13	21	42	-	15	1
	Ignore	173	-	91	4	46	-	30	2
	Refusals/Protests	27	1	17	-	11	1	19	2
	Non-Social Request	28	2	28	7	4	-	6	-
Social Interaction	Acknowledge	93	-	221	2	43	-	52	-
	Imitation	5	2	20	29	4	-	2	5
	Request Social Routine	9	-	15	42	-	-	21	8
	Show off/Attention	9	4	16	13	-	-	8	1
	Turn Taking	3	-	12	1	-	-	-	1
Joint Attention	Give Information	3	-	3	14	-	1	-	1
	Comment	1	2	5	16	-	-	-	1
	Seek Information	-	-	2	-	-	-	-	-
Total		412	14	443	149	150	2	157	22
	Total Behaviours	426		592		152		179	
	Interactive behaviours	253 (8.5)		497 (16.6)		106 (10.4)		147 (14.4)	

*NV= nonverbal; #V= verbal

	Windyvale	Kim (Teacher)				Yana (SNA)			
Function		Pre		Post		Pre		Post	
		NV*	V#	NV	V	NV	V	NV	V
Behaviour Regulation	Compliance	105	40	18	9	14	5	13	3
	Ignore	162	20	80	2	50	10	29	-
	Refusals/Protests	49	13	20	3	29	34	6	2
	Non-Social Request	26	23	44	16	16	25	21	6
Social Interaction	Acknowledge	33	3	215	4	24	-	61	-
	Imitation	0	9	5	12	-	-	-	3
	Request Social Routine	12	-	45	42	-	-	7	12
	Show off/Attention	10	4	37	5	4	-	30	4
	Turn Taking	1	-	27	1	-	-	12	0
Joint Attention	Give Information	2	20	-	14	0	5	-	6
	Comment	0	3	13	35	0	1	-	2
	Seek Information	-	-	-	-	-	-	1	-
Total		400	135	504	143	137	80	180	38
	Total Behaviours	535		647		217		218	
	Interactive behaviours	353 (r.11.6)		565 (18.8)		157 (r.17.8)		189 (21.4)	

*NV= nonverbal; #V= verbal

	Bridgeport	Violet (Teacher)				Heidi (SNA)			
Function		Pre		Post		Pre		Post	
		NV*	V#	NV	V	NV	V	NV	V
Behaviour Regulation	Compliance	64	63	17	13	16	11	3	4
	Ignore	223	14	127	-	48	4	37	-
	Refusals/Protests	13	15	31	11	7	7	7	-
	Non-Social Request	28	5	87	71	10	8	44	24
Social Interaction	Acknowledge	81	6	190	5	8	1	50	4
	Imitation	3	18	8	9	-	8	2	3
	Request Social Routine	-	-	-	-	1	1	-	1
	Show off/Attention	-	5	11	1	-	1	1	-
	Turn Taking	-	13	5	6	-	-	-	-
Joint Attention	Give Information	-	4	5	20	1	1	3	16
	Comment	6	2	6	4	-	-	-	-
	Seek Information	-	-	-	-	-	-	-	-
Total		418	145	487	140	91	42	148	52
	Total Behaviours	563		627		133		200	
	Interactive behaviours	326 (10.4)		500 (15.8)		81 (8.7)		163 (16.1)	

*NV= nonverbal; #V= verbal

	Grindstone	Maddie (Teacher)				Donna (SNA)			
Function		Pre		Post		Pre		Post	
		NV*	V#	NV	V	NV	V	NV	V
Behaviour Regulation	Compliance	198	0	15	-	102	-	26	-
	Ignore	160	2	24	1	73	-	7	-
	Refusals/Protests	10	1	1	-	1	4	2	3
	Non-Social Request	46	0	1	-	21	-	3	
Social Interaction	Acknowledge	53	2	23	2	45	-	22	1
	Imitation	4	1	-	-	2	-	-	-
	Request Social Routine	-	-	24	-	2	-	19	-
	Show off/Attention	3	-	2	9	7	-	11	3
	Turn Taking	22	-	-	-	-	-	-	-
Joint Attention	Give Information		-	-	-	-	-	-	-
	Comment	1	-		4	-	-	-	8
	Seek Information	1	-	-	-	-	-	-	-
Total		498	6	90	16	254	4	90	15
	Total Behaviours	504		106		258		105	
	Interactive behaviours	342 (r.11.3)		81 (r.8.1)		185 (r.18.5)		98 (r.9.8)	

*NV= nonverbal; #V= verbal

Appendix 39a: Nature, Role & Function of Pupil Utterances (Shanbailey)

Transcripts of Recorded Interaction Sessions

Charlie (Child) with Ella (Teacher) - Session 1 Pre-Professional Development (Pre-PD 1)

No.	Utterance	Role	Function	Length
1	<i>No</i>	Response	Refusal/Protest	1-word
2	<i>I no</i>	Response	Refusal/Protest	2-word
3	<i>Whine</i>	Response	Refusal/Protest	Vocalisation
4	<i>Whine</i>	Response	Refusal/Protest	Vocalisation
5	<i>Whine</i>	Non-interactive /No response	Ignore	Vocalisation
6	<i>n ee oo uuu hitting his hands together</i>	Response	Request Action	Vocalisation
7	<i>...you want a little bit of...</i>	Response	Request/Action	2-word
8	<i>Noooo</i>	Response	Refusal/Protest	3+ word
9		Initiation	Refusal/Protest	1-word
10	<i>Whine</i>	Initiation	Refusal/Protest	Vocalisation
11	<i>Another one</i>	Response	Compliance	2-word
12	<i>I want another one</i>	Response	Imitation	3+ word
13	<i>Blue</i>	Response	Compliance	1-word
14	<i>More</i>	Response	Compliance	1-word
15	<i>I want white one</i>	Response	Giving information, clarification	3+ word
16	<i>Purple</i>	Response	Request Action	1-word
17	<i>I don't want to make another one</i>	Response	Refusal/Protest	3+ word
18	<i>Another one</i>	Response	Giving information, clarification	2-word
19	<i>Another one</i>	Response	Compliance	2-word
20	<i>Another one</i>	Response	Compliance	2-word
21	<i>Whine</i>	Initiation	Refusal/Protest	Vocalisation
22	<i>Scream</i>	Response	Refusal/Protest	Vocalisation
23	<i>Finished</i>	Response	Giving information	1-word
24	<i>Finished</i>	Response	Compliance	1-word
25	<i>One (selecting a different item)</i>	Response	Compliance	1-word
26	<i>Its blue</i>	Response	Compliance	2-word
27	<i>Blue</i>	Response	Compliance	1-word
28	<i>Can't get it off</i>	Response	Giving information, clarification	3+ word

29	<i>Whine</i>	Initiation	Refusal/Protest	Vocalisation
30	<i>No I don't want to do another one</i>	Initiation	Refusal/Protest	3+ word
31	<i>Whine</i>	Response	Refusal/Protest	Vocalisation
32	<i>Clean</i>	Response	Request Action	1-word
33	<i>Clean</i>	Response	Compliance	1-word

Charlie with Ella Pre-PD 2

No.	Utterance	Role	Function	Length
1	<i>Red</i>	Response	Compliance	1-word
2	<i>Yellow</i>	Response	Compliance	1-word
3	<i>I don't</i>	Response	Compliance	2-word
4	<i>I want to play with these ones</i>	Response	Refusal/Protest	3+ word
5	<i>I want to tidy up</i>	Response	Compliance	3+ word
6	<i>I'm finished</i>	Response	Imitation	2-word
7	<i>lid</i>	Response	Compliance	1-word
8	<i>No, I don't want a book</i>	Response	Refusal/Protest	3+ word
9	<i>Computer</i>	Response	Giving information, clarification	1-word
10	<i>I want the</i>	Response	Compliance	3+ word
11	<i>No I want the computer</i>	Response	Compliance	3+ word
12	<i>These</i>	Response	Refusal/Protest	1-word
13	<i>I need</i>	Response	Compliance	2-word
14	<i>E</i>	Response	Giving information, clarification	1-word
15	<i>No</i>	Response	Refusal/Protest	1-word
16	<i>I want the computer I want more computer</i>	Response	Refusal/Protest	3+ word
17	<i>More</i>	Response	Request/Action	1-word
18	<i>More computer</i>	Response	Request/Action	2-word
19	<i>Whine</i>	Response	Refusal/Protest	Vocalisation
20	<i>I gone</i>	Response	Refusal/Protest	2-word
21	<i>I want the com</i>	Response	Compliance	3+ word
22	<i>Whine</i>	Response	Refusal/Protest	Vocalisation
23	<i>Whine</i>	Ignore	Non-interactive /No response	Vocalisation
24	<i>I want computer</i>	Response	Giving information, clarification	3+ word
25	<i>G, I want the G</i>	Initiation	Request/Action	3+ word

Charlie with Ella Pre-PD 3

No.	Utterance	Role	Function	Length
1	<i>Yes please</i>	Response	Request/Action	2-word
2	<i>Zoo</i>	Response	Compliance	1-word
3	<i>Dear Zoo</i>	Response	Compliance	2-word
4	<i>An elephant</i>	Response	Compliance	2-word
5	<i>A giraffe</i>	Response	Compliance	2-word
6	<i>It's a horse</i>	Initiation	Giving information, clarification	3+ word
7	<i>Snake</i>	Response	Compliance	1-word
8	<i>Sssss</i>	Response	Compliance	Vocalisation
9	<i>Monkey</i>	Response	Compliance	1-word
10	<i>Banana</i>	Response	Compliance	1-word
11	<i>Frog</i>	Response	Compliance	Vocalisation
12	<i>Inaudible</i>	Response	Compliance	Vocalisation
13	<i>The lion</i>	Response	Compliance	2-word
14	<i>RRRRR</i>	Response	Compliance	Vocalisation
15	<i>Raaar</i>	Response	Compliance	Vocalisation
16	<i>Raaar</i>	Response	Compliance	Vocalisation
17	<i>Yes please</i>	Response	Compliance	2-word
18	<i>Pop</i>	Response	Compliance	1-word
19	<i>Pets</i>	Response	Compliance	1-word
20	<i>Kittens</i>	Response	Compliance	1-word
21	<i>Bunny</i>	Response	Compliance	1-word
22	<i>Lion</i>	Response	Compliance	1-word
23	<i>Guinea Pigs</i>	Response	Compliance	2-word
24	<i>Fish</i>	Response	Compliance	1-word
25	<i>Town</i>	Response	Compliance	1-word
26	<i>Blocks</i>	Response	Request/Action	1-word
27	<i>The blocks</i>	Response	Request/Action	2-word
28	<i>A house</i>	Response	Giving information, clarification	2-word
29	<i>I want to put them back</i>	Response	Compliance	3+ word

Charlie with Ella Post-PD 1

No.	Utterance	Role	Function	Length
1	<i>Put them on, please</i>	Initiation	Request social routine	3+ word
2	<i>On me please</i>	Response	Compliance	3+ word
3	<i>Crash</i>	Initiation	Request social routine	1-word

4	<i>Crash</i>	Response	Request social routine	1-word
5	<i>Crash</i>	Response	Acknowledge	1-word
6	<i>A worm</i>	Response	Acknowledge	2-word
7	<i>Crash</i>	Initiation	Request social routine	1-word
8	<i>Crash</i>	Response	Turn taking	1-word
9	<i>Crash</i>	Initiation	Request social routine	1-word
10	<i>The ladybird</i>	Response	Compliance	2-word
11	<i>The lollipop</i>	Response	Compliance	2-word
12	<i>The butterfly</i>	Response	Compliance	2-word
13	<i>The ladybird</i>	Response	Giving information, clarification	2-word
14	<i>Ready</i>	Initiation	Request social routine	1-word
15	<i>Ready</i>	Initiation	Turn taking	1-word
16	<i>Here we come</i>	Response	Imitation	3+ word
17	<i>Crash</i>	Initiation	Turn taking	1-word
18	<i>I want worm</i>	Initiation	Request/Action	3+ word
19	<i>No, I don't want ladybird</i>	Initiation	Refusal/Protest	3+ word
20	<i>No, that's my ladybird</i>	Response	Giving information, clarification	3+ word
21	<i>Take it off again</i>	Initiation	Request/Action	3+ word
22	<i>The glove</i>	Response	Compliance	2-word
23	<i>I want to take it off</i>	Initiation	Giving information, clarification	3+ word
24	<i>Computer go to computer, go to computer</i>	Initiation	Giving information, clarification	3+ word
25	<i>Go</i>	Initiation	Request/Action	1-word
26	<i>The computer</i>	Initiation	Request/Action	2-word
27	<i>Laughter</i>	Response	Comment, shared attention	Vocalisation
28	<i>No take that</i>	Initiation	Refusal/Protest	3+ word
29	<i>take off of your elbow</i>	Initiation	Request/Action	3+ word
30	<i>Take it off again</i>	Initiation	Request/Action	3+ word
31	<i>My nose</i>	Initiation	Comment, shared attention	2-word
32	<i>Cheek</i>	Response	Compliance	1-word
33	<i>Take it off</i>	Initiation	Request/Action	3+ word
34	<i>I need to do</i>	Initiation	Giving information, clarification	3+ word
35	<i>eee ooohhh whine</i>	Initiation	Showing off/Attention	Vocalisation
36	<i>Take it off my head</i>	Initiation	Request/Action	3+ word
37	<i>That hurts</i>	Response	Comment, shared attention	2-word

38	<i>That hurts</i>	Response	Comment, shared attention	2-word
39	<i>Laughter</i>	Response	Comment, shared attention	Vocalisation
40	<i>It hurt</i>	Response	Acknowledge	2-word
41	<i>No</i>	Response	Refusal/Protest	1-word
42	<i>Ear</i>	Response	Compliance	1-word
43	<i>I don't want one</i>	Initiation	Refusal/Protest	3+ word
44	<i>I don't want one</i>	Response	Giving information, clarification	3+ word
45	<i>Ouch</i>	Response	Imitation	1-word
46	<i>Ouch</i>	Response	Imitation	1-word
47	<i>Ouch</i>	Response	Imitation	1-word
48	<i>That hurts</i>	Initiation	Comment, shared attention	2-word
49	<i>Ouch</i>	Response	Comment, shared attention	1-word
50	<i>Ouch</i>	Response	Comment, shared attention	1-word
51	<i>That hurts</i>	Response	Comment, shared attention	2-word
52	<i>I want to go to computer</i>	Initiation	Giving information, clarification	3+ word
53	<i>Ouch</i>	Response	Comment, shared attention	1-word
54	<i>That hurts</i>	Response	Comment, shared attention	2-word
55	<i>Ella</i>	Response	Compliance	1-word
56	<i>I want to go to computer now</i>	Initiation	Giving information, clarification	3+ word

Charlie with Ella Post-PD 2

No.	Utterance	Role	Function	Length
1	<i>Open it please</i>	Initiation	Request/Action	3+ word
2	<i>Put it on please</i>	Initiation	Request/Action	3+ word
3	<i>Put it on, please</i>	Initiation	Request/Action	3+ word
4	<i>Bang</i>	Initiation	Comment, shared attention	1-word
5	<i>Bang</i>	Initiation	Comment, shared attention	1-word
6	<i>A ladybird</i>	Response	Giving information, clarification	2-word
7	<i>The ladybird</i>	Response	Acknowledge	2-word
8	<i>Butterfly</i>	Response	Compliance	1-word
9	<i>The orange circle</i>	Response	Giving information, clarification	3+ word

10	<i>Crash</i>	Initiation	Showing off/Attention	1-word
11	<i>Take it off again</i>	Initiation	Request/Action	3+ word
12	<i>Crash</i>	Initiation	Request social routine	1-word
13	<i>I can trick a tiger</i>	Initiation	Request/Action	3+ word
14	<i>Crash</i>	Initiation	Request social routine	1-word
15	<i>Laughs</i>	Response	Comment, shared attention	Vocalisation
16	<i>An orange triangle</i>	Response	Giving information, clarification	3+ word
17	<i>Laughs</i>	Response	Comment, shared attention	Vocalisation
18	<i>Get him off again</i>	Response	Giving information, clarification	3+ word
19	<i>Thank you tricky Tiger</i>	Initiation	Acknowledge	3+ word
20	<i>Triangle</i>	Response	Giving information, clarification	1-word
21	<i>And crash</i>	Response	Request social routine	2-word
22	<i>Laughs</i>	Response	Comment, shared attention	Vocalisation
23	<i>My turn</i>	Response	Acknowledge	2-word
24	<i>Laughs</i>	Initiation	Comment, shared attention	Vocalisation
25	<i>A red circle</i>	Response	Giving information, clarification	3+ word
26	<i>That hurts</i>	Response	Comment, shared attention	2-word
27	<i>Laughs</i>	Response	Comment, shared attention	Vocalisation
28	<i>Can I put it on please</i>	Response	Giving information, clarification	3+ word
29	<i>Ouch that hurts</i>	Initiation	Comment, shared attention	3+ word
30	<i>Ouch</i>	Response	Comment, shared attention	1-word
31	<i>Fell</i>	Response	Compliance	1-word
32	<i>Ella's</i>	Response	Giving information, clarification	2-word
33	<i>Laughs</i>	Initiation	Comment, shared attention	Vocalisation
34	<i>I want a book, please</i>	Initiation	Giving information, clarification	3+ word
35	<i>We're finished</i>	Response	Compliance	2-word
36	<i>No</i>	Response	Refusal/Protest	1-word
37	<i>Ella's turn</i>	Response	Giving information, clarification	2-word
38	<i>The book</i>	Initiation	Giving information, clarification	2-word

Charlie with Ella Post-PD 3

No.	Utterance	Role	Function	Length
1	<i>Yellow</i>	Response	Giving information, clarification	1-word
2	<i>We go</i>	Response	Compliance	2-word
3	<i>The blue</i>	Response	Giving information, clarification	2-word
4	<i>On, please</i>	Response	Acknowledge	2-word
5	<i>Ready, steady, Go</i>	Initiation	Request social routine	3+ word
6	<i>Put it on, please</i>	Response	Giving information, clarification	3+ word
7	<i>Yes</i>	Response	Compliance	1-word
8	<i>The yellow</i>	Response	two word phrases	2-word
9	<i>Charlie's turn</i>	Response	Giving information, clarification	2-word
10	<i>You have to put it</i>	Response	Compliance	3+ word
11	<i>Ready, steady, Go</i>	Initiation	Request social routine	3+ word
12	<i>Pop</i>	Response	Request social routine	1-word
13	<i>Blue</i>	Response	Giving information, clarification	1-word
14	<i>Can I have it?</i>	Initiation	Giving information, clarification	3+ word
15	<i>Again</i>	Response	Compliance	1-word
16	<i>Pop</i>	Response	Request social routine	1-word
17	<i>Pink one</i>	Response	Giving information, clarification	2-word
18	<i>This one</i>	Response	Giving information, clarification	2-word
19	<i>Put it on, please</i>	Response	Giving information, clarification	3+ word
20	<i>Pop</i>	Initiation	Request social routine	1-word
21	<i>Put it on the blue</i>	Initiation	Request social routine	3+ word
22	<i>The blue</i>	Response	Compliance	2-word
23	<i>Turn it</i>	Response	Giving information, clarification	2-word
24	<i>Ready, steady, Go</i>	Initiation	Request social routine	3+ word
25	<i>This one (selecting a different item)</i>	Initiation	Giving information, clarification	2-word
26	<i>Press (as he Presses the spinning top)</i>	Initiation	Comment, shared attention	1-word
27	<i>Ready, steady,</i>	Initiation	Request social routine	3+ word
28	<i>Pop</i>	Response	Giving information, clarification	1-word
29	<i>Pop</i>	Initiation	Request social routine	1-word
30	<i>Pop</i>	Response	Giving information, clarification	1-word

31	<i>Ready, Steady, Go</i>	Response	Giving information, clarification	3+ word
32	<i>Pop</i>	Response	Giving information, clarification	1-word
33	<i>Yes please</i>	Response	Compliance	2-word
34	<i>Car</i>	Response	Compliance	1-word
35	<i>A boat</i>	Response	Giving information, clarification	2-word
36	<i>it's a train</i>	Initiation	Giving information, clarification	3+ word
37	<i>Bus</i>	Response	Compliance	1-word
38	<i>There it is</i>	Response	Giving information, clarification	3+ word
30	<i>Pink van</i>	Response	Giving information, clarification	2-word
40	<i>I can watch a DVD</i>	Initiation	Comment, shared attention	3+ word

Charlie with Nuala Pre-PD

No.	Utterance	Role	Function	Length
1	<i>One</i>	Response	Compliance	1-word
2	<i>Len</i>	Response	Compliance	1-word
3	<i>Len high</i>	Response	Compliance	2-word
4	<i>High</i>	Response	Compliance	1-word
5	<i>He is</i>	Response	Compliance	2-word
6	<i>No</i>	Response	Refusal/Protest	1-word
7	<i>Tabby</i>	Response	1 w	1-word
8	<i>Hide</i>	Response	Compliance	1-word
9	<i>I don't want to</i>	Response	Refusal/Protest	3+ word
10	<i>Hello</i>	Response	Compliance	1-word
11	<i>Like to hide</i>	Response	Compliance	3+ word
12	<i>Want to hide from Helen</i>	Response	Compliance	3+ word
13	<i>This is Helen</i>	Response	Showing off/Attention	3+ word
14	<i>Helen</i>	Response	Compliance	1-word
15	<i>Like to hide from Conor</i>	Response	Compliance	3+ word
16	<i>This is Conor</i>	Response	Compliance	3+ word
17	<i>Rex</i>	Response	Compliance	1-word
18	<i>To hide</i>	Response	Compliance	2-word
19	<i>Want to hide from mammy</i>	Response	Compliance	3+ word
20	<i>This is Mammy</i>	Response	Compliance	3+ word
21	<i>This is Tabby</i>	Response	Compliance	3+ word
22	<i>Rex</i>	Response	Compliance	1-word
23	<i>Inaudible</i>	Response	Compliance	1-word

24	<i>Hide from Daddy</i>	Response	Compliance	3+ word
25	<i>This is Daddy</i>	Response	Compliance	3+ word
26	<i>Painting</i>	Response	Compliance	1-word
27	<i>Hide from Rex</i>	Response	Compliance	3+ word
28	<i>This is Granny</i>	Response	Compliance	3+ word
29	<i>Telly</i>	Response	Compliance	1-word
30	<i>Two, three, four</i>	Response	Compliance	3+ word
31	<i>Can hide from Jill</i>	Response	Compliance	3+ word
32	<i>Like to hide from Jill</i>	Response	Compliance	3+ word
33	<i>This is Jill</i>	Response	Compliance	3+ word
34	<i>Conor</i>	Response	Compliance	1-word
35	<i>Helen</i>	Response	Compliance	1-word
36	<i>Conor</i>	Response	Compliance	1-word
37	<i>Is Jill</i>	Response	Compliance	2-word
38	<i>Shati</i>	Response	Compliance	1-word
39	<i>Inaudible</i>	Response	Compliance	1-word
40	<i>Len jump down on Rex and Tabby</i>	Response	Compliance	3+ word
41	<i>This is Rex. This is Tabby</i>	Response	Compliance	3+ word
42	<i>Play ball</i>	Response	Compliance	2-word
43	<i>Two, three four five six</i>	Response	Compliance	3+ word
44	<i>Mammy and Daddy and Granny Helen and Zip and Conor</i>	Response	Compliance	3+ word
45	<i>Rex and Tabby and Vinny</i>	Response	Compliance	3+ word
46	<i>Good bye</i>	Response	Compliance	2-word
47	<i>Don't want pictures</i>	Response	Refusal/Protest	3+ word
48	<i>Inaudible</i>	Response	Compliance	1-word

Charlie with Nuala Post-PD

No.	Utterance	Role	Function	Length
1	<i>Shaving foam</i>	Initiation	Giving information, clarification	2-word
2	<i>This one</i>	Response	Giving information, clarification	2-word
3	<i>This one</i>	Response	Giving information, clarification	2-word
4	<i>White</i>	Response	Giving information, clarification	1-word
5	<i>White one</i>	Response	Imitation	2-word
6	<i>Shake</i>	Response	Acknowledge	1-word
7	<i>Dinosaur</i>	Response	Giving information, clarification	1-word
8	<i>Whining</i>	Response	Refusal/Protest	Vocalisation

9	<i>Press it on</i>	Response	Giving information, clarification	3+ Word
10	<i>Squish</i>	Response	Giving information, clarification	1-word
11	<i>Don't know</i>	Response	Refusal/Protest	2-word
12	<i>This one</i>	Response	Giving information, clarification	2-word
13	<i>This one</i>	Response	Giving information, clarification	2-word
14	<i>Blue</i>	Response	Giving information, clarification	1-word
15	<i>Open</i>	Response	Compliance	1-word
16	<i>Press</i>	Initiation	Comment	1-word
17	<i>Slippy</i>	Response	Compliance	1-word
18	<i>Blue</i>	Response	Compliance	1-word
19	<i>Foam</i>	Response	Compliance	1-word
20	<i>Bye bye</i>	Initiation	Comment	2-word
21	<i>Splash</i>	Response	Giving information, clarification	1-word
22	<i>Blue</i>	Response	Compliance	1-word
23	<i>In the blue</i>	Response	Compliance	3+ Word
24	<i>Dayo</i>	Response	Compliance	1-word
25	<i>Foam</i>	Response	Compliance	1-word
26	<i>Don't want to</i>	Response	Refusal/Protest	3+ Word
27	<i>Hand off me (smiling)</i>	Response	Showing off/Attention	3+ Word
28	<i>Yes (agreement)</i>	Response	Acknowledge	1-word
29	<i>Yes, please</i>	Response	Compliance	2-word
30	<i>Red</i>	Response	Compliance	1-word
31	<i>Red</i>	Response	Giving information, clarification	1-word
32	<i>Red</i>	Response	Compliance	1-word
33	<i>H</i>	Response	Giving information, clarification	1-word
34	<i>R</i>	Response	Giving information, clarification	1-word
35	<i>I</i>	Response	Giving information, clarification	1-word
36	<i>S</i>	Response	Compliance	1-word
37	<i>This one</i>	Response	Compliance	1-word
38	<i>Open</i>	Response	Giving information, clarification	1-word
39	<i>do this</i>	Response	Request/Action	2-word
40	<i>P</i>	Response	Giving information, clarification	1-word

41	<i>H</i>	Response	Giving information, clarification	1-word
42	<i>E</i>	Response	Giving information, clarification	1-word
43	<i>R</i>	Response	Giving information, clarification	1-word
44	<i>Stop</i>	Initiation	Refusal/Protest	1-word
45	<i>Hair</i>	Initiation	Request social routine Hair	1-word
46	<i>This one</i>	Response	Giving information, clarification	2-word
47	<i>This one</i>	Response	Giving information, clarification	2-word
48	<i>Foam</i>	Initiation	Giving information, clarification	1-word
49	<i>white</i>	Response	Compliance	1-word
50	<i>Hey ho my daddeo</i>	Response	Compliance	2-word
51	<i>My daddeo</i>	Response	Compliance	2-word
52	<i>Home time</i>	Initiation	Giving information, clarification	2-word

Appendix 39b: Nature, Role & Function of Pupil Utterances (Clonadoo)

Transcript of Recorded Interaction Sessions

Freddie (Child) with Síofra (Teacher) - Session 1 Pre-Professional Development (Pre-PD 1)

No.	Utterance	Role	Function	Length
1	Vocalisations	Initiation	Request Action	1-word
2	Sounds like "sandwiches"	Response	Imitation	1-word
3	<i>Mani</i>	Response	Imitation	1-word

Freddy with Síofra Pre-PD Interaction Session 2

No.	Utterance	Role	Function	Length
1	Pulls his wrist away from the teacher while uttering 'No'	Response	Refusal/Protest	1-word
2	<i>aaah</i> (vocalised for spoon)	Response	Request/Action	Vocalisation

Freddy with Síofra Pre-PD Interaction session 3

No.	Utterance	Role	Function	Length
1	<i>Snow</i>	Response	Compliance	1-word
2	<i>Went</i>	Response	Compliance	1-word
3	<i>Went</i>	Response	Compliance	1-word
4	He sang <i>pull pull clap</i> while looking at the teacher	Initiation	Showing off/Attention	2-word

5	<i>Clap clap</i> begins singing clap clap while looking at the teacher during the song	Initiation	Showing off/Attention	2-word
6	<i>pull pull clap clap</i> Sings <i>pull pull clap clap</i> while looking at the teacher	Initiation	Showing off/Attention	2-word
7	Sings the words <i>pull pull clap clap clap</i>	Initiation	Showing off/Attention	2-word
8	Laughing He laughs heartily during the song while clapping and giving the teacher eye contact as if to say I really like this.	Initiation	Comment, shared attention	vocalisation
9	Laughter	Response	Comment, shared attention	vocalisation

Freddy with Síofra Post-PD 1

No.	Utterance	Role	Function	Length
1	<i>Sings "dee"</i> smiling;	Initiation	Showing off/Attention	Vocalisation
2	<i>Sings, dadée dada dadée</i> , in reply to teacher's singing	Initiation	Turn taking	Vocalisation
3	laughter while looking at the teacher	Initiation	Showing off/Attention	Vocalisation
4	Laughs while hiding his face with the canisters	Initiation	Showing off/Attention	Vocalisation
5	Laughter	Response	Showing off/Attention	Vocalisation
6	<i>Open</i>	Response	Imitation	1-word
7	<i>Open</i>	Initiation	Request/Action	1-word
8	<i>Open</i>	Initiation	Request/Action	1-word
9	<i>Open</i>	Initiation	Request/Action	1-word
10	<i>Press</i>	Initiation	Request/Action	1-word
11	<i>Open</i>	Response	Imitation	1-word
12	<i>Prey</i>	Response	Compliance	1-word
13	<i>Two, three ...prey</i>	Response	Compliance	3+ word
14	<i>Fall down</i>	Initiation	Comment, shared attention	2-word
15	<i>One two three go</i>	Initiation	Request social routine	3+ word

16	<i>One two three</i> (telling the teacher what he was going to do)	Initiation	Showing off/Attention	3+ word
17	<i>Press</i>	Response	Imitation	1-word
18	<i>Press</i>	Response	Compliance	1-word
19	<i>Eight, nine</i>	Non-interactive/no-response	ignore	2-word
20	<i>Two three pr</i>	Response	Compliance	3+ word
21	<i>Prrrrreeeees</i>	Response	Imitation	1-word
22	<i>Down</i>	Response	1-word	Give information
23	<i>Pop pop pop</i>	Initiation	Request social routine	3+ word
24	<i>Bubble</i>	Initiation	Comment, shared attention	1-word
25	<i>Pop pop pop</i>	Initiation	Request/Action	3+ word
26	<i>Pop</i>	Response	Imitation	1-word
27	<i>Blow</i>	Response	imitation	1-word
28	<i>Pop</i>	Response	Imitation	1-word
29	<i>Blow</i>	Response	Imitation	1-word
30	<i>Blow</i>	Response	Give clarification	1-word
31	<i>Steady go</i>	Response	Compliance	2-word
32	<i>Ready steady go</i>	Response	Compliance	3+ word
33	<i>aw doo dee doo</i> He vocalises while shaking his body when all the bubbles are burst	Initiation	Showing off/Attention	Vocalisation
34	<i>Press</i>	Response	Compliance	1-word
35	<i>Press</i> He says the word press when the teacher is holding the balloon pump waiting;	Initiation	Request social routine	1-word
36	<i>Press, press, press, press, press, press,</i> he says the word press five times in a row and the teacher reinforces the request each time ;	Initiation	Request social routine	3+ word
37	<i>Bang, bang, bang</i>	Response	Imitation	3+ word
38	<i>Steady, ready go</i>	Response	Compliance	3+ word

Freddy with Síofra Post-PD 2

No.	Utterance	Role	Function	Length
1	<i>Prey</i>	Response	Imitation	1-word
2	He comments on what he is doing using the word <i>Press</i>	Initiation	Comment	1-word
3	He comments on what he is doing using the word <i>Press</i>	Initiation	Comment	1-word
4	<i>Press</i> . He comments while trying to activate the nozzle.	Initiation	Comment	1-word
5	<i>Press</i> He says press to the teacher and points canister to window	Response	Compliance	1-word
6	<i>Press</i> he says press to the teacher when she is pointing the canister at the window	Response	Request social routine	1-word
7	<i>Press</i> . He says press to the teacher when she has the canister pointed to the table	Initiation	Request social routine	1-word
8	" <i>Uff</i> "	Initiation	Give information	1-word
9	<i>A a a</i>	Response	Compliance	3+ word
10	<i>Aaa</i> He labels the letter the teacher has written on the table	Initiation	Comment, shared attention	3+ word
11	<i>W w w</i> giving the teacher information on what letter he wants her to write on the table	Initiation	Request social routine	3+ word
12	<i>W, w, w</i>	Initiation	Request social routine	3+ word
13	<i>W, w,</i>	Initiation	Request social routine	2-word
14	<i>W, w, w,</i>	Initiation	Comment, shared attention	3+ word
15	" <i>Three</i> " giving information about what comes next	Initiation	Giving Information	1-word
16	He gives teacher information that he wants her to write <i>three</i>	Initiation	Gives Clarification	1-word

17	<i>Press</i> He asks the teacher to press the nozzle of the canister she is holding	Initiation	Request social routine	1-word
18	<i>Down</i> Giving information that he wants her to spray the spaghetti down while following her actions above their heads and below the table	Response	1-word	Giving Information
19	<i>Giving the teacher information that he wants her to press (pre)</i>	Response	Giving Information	1-word
20	<i>Press</i>	Response	Imitation	1-word
21	<i>Oope (open)</i>	Response	Compliance	vocalisation
22	<i>Press</i> He requests that she press the nozzle of the can she is high above him	Response	Request/action	1-word
23	<i>Steady do</i>	Response	Compliance	2-word
24	<i>W, w, w,</i>	Response	Request/Action	3+ word
25	<i>Steady, go</i>	Initiation	Response	2-word
26	<i>Whee (vocalisation)</i>	Initiation	Comment, shared attention	1-word
27	<i>Go</i>	Response	Imitation	1-word
28	<i>Steady go</i>	Response	Compliance	2-word
29	<i>Go</i>	Response	Imitation	1-word
30	<i>Ready, steady go</i>	Initiation	Showing off/Attention	3+ word
31	<i>Ready, steady go</i>	Initiation	Showing off/Attention	3+ word
32	<i>Ready, steady go</i>	Initiation	Showing off/Attention	3+ word
33	<i>Laughter</i>	Response	Acknowledge	vocalisation
34	<i>Steady</i>	Response	Imitation	1-word
35	<i>Go</i>	Response	Imitation	1-word
36	<i>Ready steady go</i>	Response	Request social routine	3+ word
37	<i>Steady go</i>	Response	Compliance	2-word
38	<i>Reddy steady go</i>	Initiation	Showing off/Attention	3+ word
39	<i>Bang, bang, bang, bang bang</i>	Response	Imitation	3+ word
40	<i>Red blue red</i>	Initiation	Request social routine	3+ word
41	<i>Red</i>	Response	Imitation	1-word
42	<i>Red blue</i>	Initiation	Request social routine	2-word
43	<i>Red blue blue</i>	Initiation	Request social routine	3+ word
44	<i>Red blue and red</i>	Initiation	Request social routine	3+ word
45	<i>Red blue</i>	Response	Imitation	2-word

46	<i>Red blue dedow</i>	Response	Imitation	3+ word
47	<i>Blue red</i>	Non-interactive/no-response	ignore	2-word
48	<i>Wh wh</i>	Response	Imitation	vocalisation
49	<i>Yeaaaaah</i>	Response	Showing off/Attention	1-word
50	<i>Wee, wee, wee,</i>	Initiation	Request social routine	vocalisation

Freddy with Síofra Post-PD 3

No.	Utterance	Role	Function	Length
1	<i>Go</i>	Response	Compliance	1-word
2	<i>Go</i>	Response	Compliance	1-word
3	<i>Go, go, go</i>	Non-interactive/no-response	Ignore	3+ word
4	<i>Go</i>	Response	Compliance	1-word
5	<i>Terrific</i>	Response	Compliance	1-word
6	<i>Ready steady go.</i> He comments using ready steady go as he tries to activate the gun	Initiation	Showing off/Attention	3+ word
7	<i>Oooh ohh</i> He vocalises in an excited way looking intently at the item in the teacher's hand as if to ask "what is it"	Response	Comment, shared attention	Vocalisation
8	<i>Ready go</i>	Response	Compliance	2-word
9	<i>Ready steady go</i>	Non-interactive/no-response	Ignore	2-word
10	<i>Steady go</i> He says steady go to request help from the teacher	Initiation	Request/action	2-word
11	He says <i>ready steady go</i> asking for help to activate the gun	Initiation	Request/Action	3+ word
12	<i>Press</i>	Response	Compliance	1-word
13	<i>Press</i> He asks her to press the nozzle as she points the canister to the wall	Initiation	Request/Action	1-word
14	<i>Uff uff uff uff uff uff</i> He labels the letter the teacher has drawn on the wall	Initiation	Comment, shared attention	3+ word

15	<i>Three</i> He tells her what comes next "three"	Response	Giving Information	2-word
16	<i>1,2</i> He labels what she should write	Initiation	Comment, shared attention	2-word
17	<i>Two</i> (inaudible) He labels the number 2 the teacher has drawn	Initiation	Comment, shared attention	1-word
18	<i>Three</i> He turns towards the teacher who is holding the canister in her hand and says three requesting that she write the number 3	Initiation	Request social routine	1-word
19	He requests she write the number four	Initiation	Request social routine	1-word
20	<i>Four</i> He requests 4 again because the other one fell off the wall	Initiation	Gives Clarification	1-word
21	<i>Five</i>	Initiation	Request social routine	1-word
22	<i>Seex</i>	Initiation	Request social routine	1-word
23	<i>Seven</i>	Initiation	Request social routine	1-word
24	<i>Eight</i>	Initiation	Request social routine	1-word
25	<i>Nine</i>	Initiation	Request social routine	1-word
26	Imitates teachers vocalisation <i>oooh</i>	Response	Imitation	1-word
27	He imitates when the teacher says nine	Response	Imitation	1-word
28	<i>T ten</i>	Initiation	Request social routine	1-word
29	<i>Eighteen</i> He says eighteen <i>ninenine twenty</i> while looking at the teacher seeking clarification if this is correct	Initiation	Showing off/Attention	3+ word
30	He imitates when teacher says <i>eleven</i>	Response	Imitation	1-word
31	<i>Twentyp-two</i>	Initiation	Request social routine	2-word
32	He imitates when she says <i>twelve</i>	Response	Imitation	1-word
33	<i>Ssss</i>	Response	Compliance	1-word
34	<i>Ya ba ba ba</i>	Initiation	Request social routine	3+ word
35	<i>Aaa</i>	Initiation	Request social routine	3+ word
36	<i>W,w,w,</i>	Initiation	Request social routine	3+ word
37	<i>Nine</i>	Initiation	Request social routine	1-word

38	<i>Ten</i>	Initiation	Request social routine	1-word
39	<i>Nine</i>	Initiation	Request social routine	1-word
40	A he gives her the information that he wants a	Response	Request social routine	1-word
41	<i>Sun</i> He asks her to draw a sun	Initiation	Request social routine	1-word
42	<i>Sun</i>	Response	Imitation	1-word
43	Sun	Response	Imitation	1-word
44	Sun He labels the circle she draws as Sun	Initiation	Gives Clarification	1-word
45	Ok sun he clarifies for the teacher what he wants by saying okay sun	Response	Request social routine	2-word
46	<i>Sun</i> He labels what the teachers draws as sun	Response	Imitation	1-word
47	<i>Three</i> He says three requesting she write it	Initiation	Request social routine	1-word
48	<i>See see</i> He says "si " si" giving clarification that it was C not three he wanted	Initiation	Gives Clarification	1-word
49	He says <i>six</i> after her	Response	Imitation	1-word
50	<i>Five five</i> He says five twice giving eye contact to clarify what he wants	Initiation	Gives clarification	2-word
51	<i>Four</i>	Initiation	Request social routine	1-word
52	<i>Three</i>	Initiation	Request social routine	1-word
53	<i>Two</i>	Initiation	Request social routine	1-word
54	<i>One</i>	Initiation	Request social routine	1-word
55	<i>One</i>	Response	Comment	1-word
56	He begins to label the numbers on the wall one two,	Initiation	Showing off/attention	2-word
57	<i>Bubble</i> He labels what the teacher is holding "bubble"	Initiation	Comment, shared attention	1-word
58	<i>Bubble</i>	Initiation	Comment, shared attention	1-word
59	<i>Puff</i> he labels as he is blowing pop	Initiation	Comment, shared attention	1-word

60	<i>Pree</i> he requests she press the frog's back to make him hop	Initiation	Request social routine	1-word
61	<i>Pree</i>	Initiation	Request social routine	1-word
62	He imitates the word <i>press</i>	Response	Imitation	1-word
63	<i>Reddy steady go</i>	Response	Refusal/protest	3+ word

Freddy with Sunita Pre-PD

No.	Utterance	Role	Function	Length
1	<i>Three</i>	Response	Comment	1-word
2	<i>No</i>	Response	Refusal/Protest	1-word

Freddy with Sunita Post-PD

No.	Utterance	Role	Function	Length
1	<i>Pull pull clap clap clap</i>	Response	Compliance	3+ word
2	He repeats three after SNA sings <i>three</i>	Response	Imitation	1-word
3	<i>Eem heem</i>	Initiation	Request social routine	Vocalisation
4	<i>Ooh uuh</i>	Initiation	Request social routine	Vocalisation
5	<i>Aah eeeem</i>	Initiation	Request social routine	Vocalisation
6	<i>Oh uh oh uh</i>	Response	Imitation	Vocalisation
7	<i>Oh oh oho oh</i>	Response	Refusal/protest	Vocalisation
8	<i>Oohuuh</i>	Response	Request social routine	Vocalisation
9	<i>Ooh ooh</i>	Response	Imitation	Vocalisation
10	<i>Hmm umm umm</i>	Initiation	Request social routine	Vocalisation
11	<i>Uuum eemm</i>	Initiation	Request social routine	Vocalisation
12	<i>Uuum eeem</i>	Response	Imitation	Vocalisation
13	<i>Uff uff uff</i>	Response	Give information/clarification	3+ word
14	<i>Aaa</i>	Initiation	Show off/attention	3+ word
15	<i>Blue</i>	Response	Imitation	1-word
16	<i>Blue</i>	Response	Imitation	1-word
17	<i>Eeh eeh</i>	Non-interactive/no-response	Ignore	Vocalisation
18	<i>Uumuum uum</i>	Initiation	Request social routine	Vocalisation
19	<i>Da di da da da</i>	Initiation	Request social routine	Vocalisation
20	<i>Da da daam</i>	Response	Turn taking	Vocalisation

21	<i>No, no</i> He tries to pull the watch	Response	Refusal/Protest	2-word
22	<i>Bubble</i>	Initiation	Comment	1-word

Appendix 39c: Nature, Role & Function of Pupil Utterances (Windyvale)

Transcript of Recorded Interaction Sessions

Elana (Child) with Yana (Teacher) Session 1 Pre-Professional Development (Pre-PD

1)

No.	Utterance	Role	Function	Length
1	<i>HJL</i>	Response	Compliance	2-word
2	<i>Brush</i>	Response	Compliance	1-word
3	<i>No</i>	Response	Compliance	1-word
4	<i>Knife</i>	Initiation	Comment, shared attention	1-words
5	<i>No</i>	Initiation	Give information/clarification	1-words
6	<i>Too big</i>	Response	Comment, shared attention	2-word
7	<i>No no no</i>	Initiation	Refusal/Protest	3+ word
8	<i>Blocks</i>	Response	Compliance	1-word
9	<i>No, no no</i>	Initiation	Refusal/Protest	3+ word
10	<i>Up there</i>	Non-interactive / no-response	Ignore	2-word
11	<i>No, no, no, no, no, no,</i>	Response	Refusal/Protest	3+ word
12	<i>No more</i>	Response	Refusal/Protest	2-word
13	<i>Pram</i>	Response	Compliance	1-word
14	<i>Then blocks</i>	Initiation	Give information, clarification	2-word
15	<i>Flat screen</i>	Non-interactive / no-response	ignore	2-word
16	<i>Toothbrush</i>	Non-interactive / no-response	ignore	1-word
17	<i>Teeth</i>	Response	Compliance	1-word
18	<i>Crying</i>	Initiation	Refusal/Protest	vocalisation
19	<i>Teeth</i>	Response	Compliance	1-word
20	<i>Vocalisations and "No"</i>	Response	Refusal/Protest	1-word
21	<i>Tired</i>	Initiation	Give information	1-word
22	<i>Net, net</i>	Response	Compliance	1-word
23	<i>I'm tired</i>	Initiation	Give information/clarification	2-word
24	<i>Alright, alright</i>	Response	Compliance	2-word
25	<i>Alright</i>	Response	Compliance	1-word

26	<i>Crying moaning</i>	Non- interactive / no-response	Ignore	vocalisation
27	<i>Mammy</i>	Initiation	Refusal/Protest	1-word
28	<i>Me too (unclear)</i>	Non- interactive / no-response	ignore	2-word
29	<i>Moaning</i>	Non- interactive / no-response	ignore	vocalisation
30	<i>Don't want that</i>	Initiation	Refusal/Protest	3+ word
31	<i>Red</i>	Response	Compliance	1-word
32	<i>Strawberry</i>	Non- interactive / no-response	ignore	1-word
33	<i>Flowers</i>	Response	Compliance	1-word
34	<i>Do bee doo bee</i>	Non- interactive / no-response	ignore	vocalisation
35	<i>Bed</i>	Response	Compliance	1-word
36	<i>Moon</i>	Response	Compliance	1-word
37	<i>Dee eed dah</i>	Initiation	Show off/Attention	vocalisation

Elana with Yana Pre-PD 2

No.	Utterance	Role	Function	Length
1	<i>Table</i>	Response	Compliance	1-word
2	<i>Pink please</i>	Initiation	Request/Action	2-word
3	<i>Ball</i>	Response	Compliance	1-word
4	<i>Shouts nonsensical words into Yana's face a bee a like</i>	Initiation	Refusal/Protest	Vocalisation
5	<i>Shouts nonsensical words into Y's face "uh dee dee"</i>	Initiation	Refusal/Protest	Vocalisation
6	<i>Daw awbe aw be daah</i>	Non-interactive / no-response	Ignore	Vocalisation
7	<i>Let's go camping</i>	Initiation	Request/Action	3+ word
8	<i>Obi die yuuu</i>	Non-interactive / no-response	Ignore	Vocalisation
9	<i>Dee dappi dee dappi</i>	Non-interactive / no-response	Ignore	Vocalisation
10	<i>Ho be di hih bi me hutch</i>	Initiation	Show off/attention	Vocalisation
11	<i>Dah doh bee yuu</i>	Non-interactive / no-response	Ignore	Vocalisation
12	<i>Bird</i>	Initiation	Comment, shared attention	1-word
13	<i>Chick</i>	Response	Imitation	1-word

14	<i>Dah doh bee yuu</i>	Initiation	Show off/attention	Vocalisation
15	<i>Aww doo</i>	Non-interactive / no-response	Ignore	Vocalisation
16	<i>Shouts nonsensical words into Yana's hand Bee bee basi babee bee bee bee</i>	Initiation	Refusal/Protest	Vocalisation
17	<i>Bawyah bawyah bawyah screaming it</i>	Non-interactive / no-response	Ignore	Vocalisation
18	<i>Use, stop use, stop use stop use</i>	Non-interactive / no-response	Ignore	Vocalisation
19	<i>Stop you stop</i>	Initiation	Refusal/Protest	3+ word
20	<i>Now shellalilalidaee</i>	Non-interactive / no-response	Ignore	Vocalisation
21	<i>Key please</i>	Initiation	Request/Action	2-word
22	<i>Yellow</i>	Initiation	Request/action	1 worj1w3d
23	<i>Sun</i>	Response	Compliance	1-word

Elana with Yana Pre-PD 3

No.	Utterance	Role	Function	Length
1	<i>Chiffs</i>	Response	Compliance	1-word
2	<i>Water</i>	Response	Compliance	1-word
3	<i>Kent</i>	Response	Compliance	1-word
4	<i>Tin of soup</i>	Response	Imitation	3+ word
5	<i>Shortbread</i>	Response	Imitation	1-word
6	<i>Peaches</i>	Response	Compliance	1-word
7	<i>Spinach</i>	Response	Imitation	1-word
8	<i>Bananas</i>	Response	Compliance	1-word
9	<i>Bottle</i>	Response	Compliance	1-word
10	<i>Of</i>	Response	Compliance	1-word
11	<i>Milk</i>	Response	Imitation	1-word
12	<i>Grapes</i>	Response	Compliance	1-word
13	<i>Louisa (meaning mayonnaise)</i>	Non-interactive / no-response	Ignore	1-word
14	<i>Sauce</i>	Response	Give information, clarification	1-word
15	<i>Milk</i>	Response	Compliance	1-word
16	<i>Strawberry</i>	Response	Compliance	1-word
17	<i>Tin of soup</i>	Response	Compliance	3+ word
18	<i>Tin of meat</i>	Response	Imitation	3+ word
19	<i>May a tent please</i>	Response	Compliance	3+ word
20	<i>Tent</i>	Response	Request /action	1-word

21	<i>A tent</i>	Response	Request /action	2-word
22	<i>Tin of soup</i>	Initiation	Request /action	3+ word
23	<i>Tomato</i>	Response	Imitation	1-word
24	<i>Banana</i>	Response	Compliance	1-word
25	<i>Banana please</i>	Response	Request /action	2-word
26	<i>No do mee do me me</i>	Initiation	Show off/attention	Vocalisation
27	<i>Sauce</i>	Initiation	Request /Action	1-word
28	<i>Sauce please</i>	Response	Compliance	2-word
29	<i>May I have the sauce please</i>	Initiation	Request /Action	3+ word
30	<i>Salad sauce</i>	Response	Request /Action	2-word
31	<i>Chips please</i>	Response	Request /Action	2-word
32	<i>No thanks</i>	Response	Acknowledge	2-word
33	<i>Grapes</i>	Response	Give information, clarification	1-word
34	<i>Can I have</i>	Response	Compliance	3+ word
35	<i>Grapes please</i>	Response	Compliance	2-word
36	<i>Please oheeehe</i>	Response	Compliance	1-word
37	<i>Do bee doo bee daa do be cup doo bee dan</i>	Non-interactive / no-response	Ignore	3+ word
38	<i>Mornin</i>	Response	Acknowledge	1-word
39	<i>May I have cookie, please</i>	Response	Compliance	3+ word
40	<i>Money</i>	Response	Imitation	1-word
41	<i>Sauce</i>	Response	Request /Action	1-word
42	<i>Yellow please</i>	Initiation	Request /action	2-word
43	<i>Tomato</i>	Response	Compliance	1-word
44	<i>Thank you</i>	Response	Compliance	1-word
45	<i>No thanks</i>	Response	Refusal/Protest	2-word
46	<i>Waffle, Waffle please</i>	Response	Request /Action	3+ word
47	<i>Milk please</i>	Response	Give information, clarification	2-word
48	<i>Milk please</i>	Response	Acknowledge	2-word
49	<i>Milk</i>	Response	Request /Action	1-word
50	<i>Milk, this one</i>	Response	Give information, clarification	3+ word
51	<i>Strawberries</i>	Response	Give information, clarification	1-word
52	<i>Ca (inaudible)</i>	Initiation	Request /action	1-word
53	<i>This please</i>	Initiation	Request /action	2-word

54	<i>More, thanks</i>	Response	Request /action	2-word
55	<i>Ham</i>	Response	Give information, clarification	1-word
56	<i>Ham please</i>	Response	Request /Action	2-word
57	<i>This one</i>	Response	Give information, clarification	2-word
58	<i>This one</i>	Response	Give information, clarification	2-word
59	<i>Biscuits please</i>	Initiation	Request /action	2-word
60	<i>Thank you</i>	Response	Compliance	2-word
61	<i>Toast please</i>	Initiation	Request /action	2-word
62	<i>Chips please</i>	Response	Give information, clarification	2-word
63	<i>Inaudible</i>	Response	Compliance	1-word
64	<i>Babababayee</i>	Non-interactive / no-response	Ignore	Vocalisation
65	<i>Grapes please</i>	Response	Give information, clarification	2-word
66	<i>Snacks please</i>	Response	Give information, clarification	2-word
67	<i>Snacks please</i>	Response	Give information, clarification	2-word
68	<i>Chocolate snickers</i>	Response	Give information, clarification	2-word
69	<i>No thanks</i>	Response	Compliance	2 w
70	<i>Spinach</i>	Response	Imitation	1-word
71	<i>Milk please</i>	Response	Request /Action	2-word
72	<i>Milk please</i>	Initiation	Request /Action	2-word
73	<i>Paper one</i>	Initiation	Give information, clarification	2-word
74	<i>That one</i>	Response	Give information, clarification	2-word

Elana with Yana Post-PD 1

No.	Utterance	Role	Function	Length
1	<i>do dee</i>	Initiation	comment, shared attention	Vocalisation
	<i>Laughter</i>			3on
2	<i>Camera</i>	Initiation	comment, shared attention	1-word
3	<i>Click</i>	Initiation	comment, shared attention	1-word
4	<i>Crayon, please</i>	Response	Give information, clarification	2-word
5	<i>Yes, please do</i>	Response	Request/Action	3+ word
6	<i>Open it please</i>	Response	Request/Action	3+ word
7	<i>Laughter</i>	Response	comment, shared attention	vocalisation
8	<i>Open</i>	Initiation	Request/Action	1-word

9	<i>Its good</i>	Response	compliance	2-word
10	<i>Open please open please</i>	Response	Request/Action	2-word
11	<i>Nope</i>	Initiation	Give information, clarification	1-word
12	<i>Heave ho</i>	Response	comment, shared attention	2-word
13	<i>No</i>	Initiation	comment, shared attention	1-word
14	<i>Crayons</i>	Initiation	comment, shared attention	1-word
15	<i>puuuuuuullll</i>	Initiation	comment, shared attention	1-word
16	<i>Heave how</i>	Initiation	comment, shared attention	2-word
17	<i>The crayons</i>	Initiation	Request/Action	2-word
18	<i>Crayons</i>	Initiation	Give information, clarification	1-word
19	<i>get you crayons crayons</i>	Initiation	Give information, clarification	3+ word
20	<i>bubbles</i>	Initiation	Give information, clarification	1-word
21	<i>duck duck</i>	Initiation	Give information, clarification	2-word
22	<i>Laughter</i>	Response	comment, shared attention	vocalisation
23	<i>Catch me</i>	Initiation	comment, shared attention	2-word
24	<i>blow please</i>	Response	Give information, clarification	2-word
25	<i>Blow please</i>	Response	Give information, clarification	2-word
26	<i>oooh ddd laughter</i>	Response	comment, shared attention	vocalisation
27	<i>oh de wee nee id a wee nee Laughter</i>	Response	comment, shared attention	vocalisation
28	<i>I have to get it</i>	Initiation	comment, shared attention	3+ word
29	<i>do dee Laughter</i>	Initiation	comment, shared attention	vocalisation
30	<i>Camera</i>	Initiation	comment, shared attention	1-word
31	<i>Click</i>	Initiation	comment, shared attention	1-word
32	<i>Crayon please</i>	Response	Give information, clarification	2-word
33	<i>yes please do</i>	Response	Request/Action	3+ word
34	<i>open it please</i>	Response	Request/Action	3+ word
35	<i>laughter</i>	Response	comment, shared attention	vocalisation
36	<i>Open</i>	Initiation	Request/Action	1-word
37	<i>Its good</i>	Response	compliance	2-word
38	<i>Open please open please</i>	Response	Request/Action	2-word
39	<i>Nope</i>	Initiation	Give information, clarification	1-word
40	<i>Heave ho</i>	Response	comment, shared attention	2-word

41	<i>no</i>	Initiation	comment, shared attention	1-word
42	<i>Crayons</i>	Initiation	comment, shared attention	1-word
43	<i>puuuuuuullll</i>	Initiation	comment, shared attention	1-word
44	<i>Heave how</i>	Initiation	comment, shared attention	2-word
45	<i>the crayons</i>	Initiation	Request/Action	2-word
46	<i>Crayons</i>	Initiation	Give information, clarification	1-word
47	<i>get you crayons crayons</i>	Initiation	Give information, clarification	3+ word
48	<i>bubbles</i>	Initiation	Give information, clarification	1-word
49	<i>duck duck</i>	Initiation	Give information, clarification	2-word
50	<i>Laughter</i>	Response	comment, shared attention	vocalisation
51	<i>Catch me</i>	Initiation	comment, shared attention	2-word
52	<i>Blow, please</i>	Response	Give information, clarification	2-word
53	<i>Blow, please</i>	Response	Give information, clarification	2-word
54	<i>Oooh, ddd laughter</i>	Response	comment, shared attention	vocalisation
55	<i>Oh de wee nee id a wee nee Laughter</i>	Response	comment, shared attention	vocalisation

Elana with Yana Post-PD 2

No.	Utterance	Role	Function	Length
1	Painting	Initiation	comment, shared attention	1-word
2	Painting	Initiation	comment, shared attention	1-word
3	Floor	Response	comment, shared attention	1-word
4	Paint chop painting	Non-interactive / no-response	ignore	3+ word
5	Orange (inaudible)	Response	Imitation	1-word
6	we have to find it yellow	Initiation	Request/Action	3+ word
7	Paint	Imitation	Give information, clarification	1-word
8	give my turn	Initiation	Request/Action	3+ word
9	May I have blue please	Response	Give information, clarification	3+ word
10	Leg	Response	compliance	1-word
11	Hand	Response	Request social routine	1-word
12	yes me yeha mahammy	Response	Show off/Attention	vocalisation
13	Clean	Initiation	Request social routine	1-word
14	Oh no	Initiation	comment, shared attention	2-word
15	ai dee laughter	Initiation	comment, shared attention	vocalisation

16	vocalisation mixed with laughter	Response	comment, shared attention	vocalisation
17	nonsensical words tinged with laughter	Response	comment, shared attention	vocalisation
18	Go	Response	Request social routine	1-word
19	colours all the colours	Initiation	comment, shared attention	3+ word
20	Colours	Response	Imitation	1-word
21	mmeee ah faw mee mee tinged with laughter	Initiation	comment, shared attention	vocalisation
22	Go	Response	Request social routine	1-word
23	Let's go	Initiation	Show off/Attention	2-word
24	Laughter	Initiation	comment, shared attention	vocalisation
25	Biscuit	Response	Give information, clarification	1-word

Elana with Yana Post-PD 3

No.	Utterance	Role	Function	Length
1	<i>Red please</i>	Initiation	Request/Action	2-word
2	<i>Butterfly</i>	Response	Imitation	1-word
3	<i>Blow please</i>	Initiation	Request social routine	2-word
4	<i>Blow please</i>	Initiation	Request social routine	2-word
5	<i>Ready, steady go</i>	Initiation	Request social routine	3+ word
6	<i>Ready oh</i>	Response	Imitation	2-word
7	<i>Butterfly</i>	Initiation	Comment, shared attention	1-word
8	<i>Blow please</i>	Initiation	Request social routine	2-word
9	<i>Sun</i>	Initiation	Request social routine	3+ word
11	<i>Press</i>	Response	Compliance	1-word
12	<i>Not that one</i>	Response	Refusal/protest	3+ word
13	<i>Ai dee laughter</i>	Response	Show off/attention	Vocalisation
14	<i>Press</i>	Initiation	Request social routine	1-word
15	<i>Squash</i>	Response	Request social routine	1-word
16	<i>Squash</i>	Initiation	Request social routine	1-word
17	<i>Go</i>	Initiation	Request social routine	1-word
18	<i>Squash</i>	Initiation	Request social routine	1-word
19	<i>No thanks</i>	Response	Refusal/Protest	2-word
20	<i>Squash</i>	Response	Request/Action	1-word
21	<i>Nonsensical words tinged with laughter</i>	Response	Comment, shared attention	Vocalisation
22	<i>Sq ...squash</i>	Initiation	Request/Action	1-word

23	<i>Elana, draw Elana</i>	Initiation	Give information, clarification	3+ word
24	<i>Hearty laughter</i>	Response	Acknowledge	Vocalisation
25	<i>Steady go</i>	Response	Request social routine	2-word
26	<i>Squash</i>	Initiation	Request social routine	1-word
27	<i>At Kim</i>	Response	Give information, clarification	1-word
28	<i>Kim</i>	Initiation	Give information, clarification	1-word
29	<i>Go</i>	Response	Request social routine	1-word
30	<i>Squash Kim</i>	Initiation	Request social routine	2-word
31	<i>Steady go</i>	Initiation	Request social routine	2-word
32	<i>Squash Kim</i>	Initiation	Request social routine	2-word
33	<i>Squash Kim</i>	Initiation	Request social routine	2-word
34	<i>Squash Kim</i>	Initiation	Request social routine	2-word
35	<i>Go</i>	Response	Request social routine	1-word
36	<i>Set go</i>	Initiation	Request social routine	2-word
37	<i>Squash squash</i>	Initiation	Request social routine	2-word
38	<i>Press it</i>	Response	Comment, shared attention	2-word
39	<i>Go</i>	Response	Request social routine	1-word
40	<i>Go</i>	Initiation	Request social routine	1-word
41	<i>Pop</i>	Response	Imitation	1-word
42	<i>Go</i>	Initiation	Request social routine	1-word
43	<i>Go</i>	Initiation	Request social routine	1-word
44	<i>Go</i>	Initiation	Request social routine	1-word
45	<i>Do it, no thanks</i>	Initiation	Request social routine	3+ word
46	<i>Laughter</i>	Response	Comment, shared attention	Vocalisation
47	<i>Laughter</i>	Response	Comment, shared attention	Vocalisation
48	<i>Off you</i>	Initiation	Comment, shared attention	2-word
49	<i>Laughing</i>	Response	Comment, shared attention	Vocalisation
50	<i>Vocalisations tinged with laughter</i>	Initiation	Comment, shared attention	Vocalisation
51	<i>No thanks</i>	Response	Refusal/Protest	2-word
52	<i>Go</i>	Initiation	Request social routine	1-word
53	<i>Wall</i>	Response	Compliance	1-word
54	<i>Slush</i>	Response	Comment, shared attention	1-word
55	<i>Clean up</i>	Initiation	Request/Action	2-word
56	<i>Everybody let's clean</i>	Response	Request/Action	3+ word

	<i>everyone, everyone</i>			
57	<i>Clean up clean up (singing it)</i>	Non-interactive / no-response	Ignore	3+ word
58	<i>Ba doo be dee laughter</i>	Initiation	Comment, shared attention	Vocalisation
59	<i>Laughter</i>	Response	Comment, shared attention	Vocalisation
60	<i>Laughter</i>	Response	Acknowledge	Vocalisation
61	<i>Clean up</i>	Initiation	Request/Action	2-word
62	<i>Six</i>	Initiation	Request/action	1-word
63	<i>Clean</i>	Initiation	Request/action	1-word

Elana with Kim Pre-PD

No.	Utterance	Role	Function	Length
1.	<i>No</i>	Response	Refusal/Protest	1-word
2.	<i>Screaming</i>	Response	Refusal/protest	Vocalisation
3.	<i>Tired</i>	Response	Refusal/protest	1-word
4.	<i>Okay, no</i>	Response	Refusal/protest	2-word
5.	<i>No, no</i>	Response	Refusal/Protest	2-word
6.	<i>Mine</i>	Initiation	Refusal/protest	1-word
7.	<i>Get off</i>	Response	Refusal/protest	2-word
8.	<i>Screaming</i>	Response	Refusal/protest	Vocalisation
9.	<i>Crying</i>	Non-interactive /no-response	Ignore	Vocalisation
10.	<i>That one that my (inaudible)</i>	Non-interactive /no-response	Ignore	3+ word
11.	<i>Nooo, mine (screaming)</i>	Initiation	Refusal/protest	2-word
12.	<i>Crying</i>	Non-interactive /no-response	Ignore	Vocalisation
13.	<i>Crying</i>	Non-interactive /no-response	Ignore	Vocalisation
14.	<i>Me mammy</i>	Non-interactive /no-response	Ignore	2-word
15.	<i>Crying</i>	Non-interactive /no-response	Ignore	Voalisation
16.	<i>Get off Kim</i>	Initiation	Refusal/Protest	3+ word
17.	<i>Floor</i>	Initiation	Request/action	1-word
18.	<i>(Screaming) I want</i>	Response	Refusal/Protest	2-word
19.	<i>(Screaming) Mammy</i>	Response	Refusal/Protest	1-word
20.	<i>Want floor</i>	Initiation	Request/action	2-word
21.	<i>Scream</i>	Response	Refusal/protest	Vocalisation
22.	<i>No thanks</i>	Response	Refusal/protest	2-word
23.	<i>Crying</i>	Response	Refusal/Protest	Vocalisation
24.	<i>Mammy</i>	Initiation	Request/Action	1-word

25.	<i>No thanks</i>	Response	Refusal/protest	2-word
26.	<i>May have blocks please</i>	Response	Request/Action	3+ word
27.	<i>Please blocky please</i>	Response	Compliance	3+ word
28.	<i>Mine</i> (or joint attention)?	Response	Comment, shared attention	1-word
29.	<i>May have blocks please</i>	Initiation	Request/Action	3+ word
30.	<i>No, no</i>	Response	Refusal/protest	2-word
31.	(Inaudible) <i>please</i>	Response	Request/action	2-word
32.	<i>Nooo</i> (Screaming)	Response	Refusal/Protest	1-word
33.	<i>Screaming</i>	Response	Refusal/protest	Vocalisation
34.	<i>Mother</i> (Screaming)	Initiation	Request/action	1-word
35.	<i>Sit there</i> (Screaming)	Response	Compliance	2-word
36.	<i>Screaming</i>	Response	Refusal/protest	Vocalisation
37.	<i>Screaming</i>	Response	Refusal/protest	Vocalisation
38.	<i>Screaming</i>	Response	Refusal/protest	Vocalisation
39.	<i>Mined mined ...I want my block</i>	Initiation	Request/action	3+ word
40.	<i>May have blocks please</i>	Response	Compliance	3+ word
41.	<i>Thank you</i>	Response	Compliance	2-word
42.	<i>Want lie down</i>	Initiation	Request/action	3+ word
43.	<i>I want lie down</i>	Initiation	Request/Action	3+ word
44.	<i>Now</i> (Screaming)	Response	Refusal/protest	1-word
45.	<i>I want lie down noow I want lie down</i> (Crying)	Initiation	Request/Action	3+ word
46.	<i>I want lie down I want lie down (inaudible) go get up (crying)</i>	Initiation	Give information, clarification	3+ word
47.	<i>Want lie down (crying)</i>	Initiation	Request/action	3+ word
48.	<i>Want lie down (crying)</i>	Initiation	Request/action	3+ word
49.	<i>I want lie down (crying)</i>	Response	Request/Action	3+ word
50.	<i>Get diddoo (tissue) rest in audible</i>	Initiation	Request/action	2-word
51.	<i>I want lie down and</i> (Screaming)	Initiation	Request/Action	3+ word
52.	<i>Mammy</i> (Crying)	Initiation	Request/Action	1-word
53.	<i>No my blocks I want lie down</i>	Response	Refusal/Protest	3+ word
54.	<i>No</i>	Response	Refusal/protest	1-word
55.	<i>No</i>	Response	Refusal/protest	1-word
56.	<i>Mine</i>	Response	Refusal/protest	1-word
57.	<i>No- want lie down</i>	Response	Refusal/protest	3+ word
58.	<i>No</i>	Response	Refusal/protest	1-word

59.	<i>I want lie down... I want lie down</i>	Initiation	Give Information	3+ word
60.	<i>I want lie down... I want lie down</i>	Response	Give information, clarification	2-word
61.	<i>Blocky please</i>	Response	Give information, clarification	2-word
62.	<i>May have blocky please</i>	Response	Compliance	3+ word
63.	<i>I want to lie down</i>	Initiation	Request/Action	3+ word
64.	<i>Down</i>	Initiation	Request/action	1-word
65.	<i>I wantgo way</i>	Initiation	Request/Action	3+ word
66.	<i>Waa youre ok</i>	Initiation	Comment, shared attention	2-word
67.	<i>Crying</i>	Response	Refusal/protest	Vocalisation
68.	<i>Screaming</i>	Initiation	Refusal/protest	Vocalisation
69.	<i>I want lie down crying</i>	Initiation	Request/Action	3+ word
70.	<i>I want my get up please</i>	Initiation	Request/Action	3+ word
71.	<i>Screaming</i>	Non-interactive /no-response	Ignore	Vocalisation
72.	<i>Crying</i>	Non-interactive /no-response	Ignore	Vocalisation
73.	<i>Tired</i>	Non-interactive /no-response	Ignore	1-word
74.	<i>This floor</i>	Initiation	Request/action	2-word
75.	<i>Screaming</i>	Response	Refusal/protest	Vocalisation
76.	<i>Get up please</i>	Initiation	Request/action	3+ word
77.	<i>Screaming</i>	Response	Refusal/protest	Vocalisation
78.	<i>No</i>	Response	Refusal/protest	1-word
79.	<i>Mammy</i>	Non-interactive /no-response	Ignore	1-word
80.	<i>The toilet</i>	Initiation	Request/action	2-word
81.	<i>No</i>	Response	Refusal/Protest	1-word

Elana with Kim Post-PD

No.	Utterance	Role	Function	Length
1	<i>Opened</i>	Response	Compliance	1-word
2	<i>Aah</i>	Response	Imitation	Vocalisation
3	<i>Crayon please (or request action)</i>	Initiation	Give information, clarification	2-word
4	<i>You press</i>	Initiation	Request/action	2-word
5	<i>Okay pr</i>	Initiation	Request/action	2-word
6	<i>Press please</i>	Initiation	Request/Action	2-word
7	<i>Press</i>	Response	Compliance	1-word
8	<i>Stick, stick, stick</i>	Initiation	Request/action	3+ word
9	<i>Press</i>	Response	Compliance	1-word

10	<i>Pouring</i>	Response	Request/action	1-word
11	<i>Pouring</i>	Response	Request/action	1-word
12	<i>Bubbles gone</i>	Initiation	Give information, clarification	2-word
13	<i>Blow</i>	Response	Request social routine	1-word
14	<i>Blow please</i>	Initiation	Request social routine	2-word
15	<i>Blow please</i>	Initiation	Request social routine	2-word
16	<i>Seat belts on</i>	Initiation	Showing off/attention	3+ word
17	<i>Seat belt</i>	Initiation	Showing off/Attention	2-word
18	<i>Seat belts on</i>	Response	Imitation	3+ word
19	<i>Blow please</i>	Response	Request social routine	2-word
20	<i>Ba be gaaaah</i>	Initiation	Showing off/attention	Vocalisation
21	<i>Blow please</i>	Initiation	Request social routine	2-word
22	<i>No thanks</i>	Response	Refusal/Protest	2-word
23	<i>Laughter</i>	Response	Comment, shared attention	Vocalisation
24	<i>Go in bus</i>	Initiation	Give information, clarification	3+ word
25	<i>Gees me ee dee dee hee</i>	Initiation	Showing off/attention	Vocalisation
26	<i>Mieow</i>	Response	Imitation	1-word
27	<i>Laughter</i>	Response	Comment, shared attention	Vocalisation
28	<i>I going home Is it time to go home)</i>	Response	Give information, clarification	3+ word
29	<i>Blow</i>	Response	Request social routine	1-word
30	<i>Blow Please</i>	Response	Request social routine	2-word
31	<i>Woo blod ulk talz</i>	Response	Showing off/attention	Vocalisation
32	<i>Blow please</i>	Response	Request social routine	2-word
33	<i>Blow please</i>	Initiation	Request social routine	2-word
34	<i>Blow bubble</i>	Initiation	Request social routine	2-word
35	<i>Going home</i>	Response	Give information, clarification	2-word
36	<i>Bubbles please</i>	Initiation	Request social routine	2-word
37	<i>I want rice</i>	Response	Give information, clarification	3+ word
38	<i>No thanks</i>	Response	Refusal/protest	2-word

Appendix 39d: Nature, Role & Function of Pupil Utterances (Bridgeport)
Transcript of Recorded Interaction Session
Keeva (Child) with Violet (Teacher) - Session 1 Pre-Professional Development (Pre-PD 1)

No.	Utterance	Role	Function	Length
1	crying bee bee	Response	Refusal/Protest	vocalisation
2	Fish	Response	Request/Action	1-word
3	Sitting	Response	Imitation	1-word
4	NO	Response	Refusal/Protest	1-word
5	Want tell me	Response	Compliance	3+ word
6	Sock	Response	Compliance	1-word
7	crying	Response	Refusal/Protest	vocalisation
8	crying	Non-interactive / no-response	ignore	vocalisation
9	whining	Non-interactive / no-response	ignore	vocalisation
10	crying	Non-interactive / no-response	ignore	vocalisation
11	crying	Non-interactive / no-response	ignore	vocalisation
2	Eye	Response	Imitation	1-word
13	Eye,	Response	Imitation	1-word
14	Tidy up	Response	Compliance	2-word
15	No	Response	Refusal/Protest	1-word
16	crying	Initiation	Refusal/Protest	vocalisation
17	crying	Response	Refusal/Protest	vocalisation
18	crying	Response	Refusal/Protest	vocalisation
19	crying	Response	Refusal/Protest	vocalisation
20	I want cookie	Initiation	Request/Action	3+ word
21	EEE Hat in, hat in hat in	Response	Imitation	2-word

Keeva with Violet Pre-PD 2

No.	Utterance	Role	Function	Length
1	<i>Cacel (Camel)</i>	Response	Give information, clarification	1-word
2	<i>Five</i>	Response	Compliance	1-word
3	<i>Bum bum</i>	Response	Turn-taking	2-word
4	<i>Bum</i>	Response	Compliance	1-word
5	<i>No</i>	Response	Acknowledge	1-word
6	<i>Five hump</i>	Response	Turn-taking	2-word
7	<i>Three</i>	Response	Compliance	1-word
8	<i>Four</i>	Response	Compliance	1-word
9	<i>Humps</i>	Response	Imitation	1-word

10	<i>No</i>	Response	Acknowledge	1-word
11	<i>Humps</i>	Response	Acknowledge	1-word
12	<i>Ee humps</i>	Response	Turn-taking	2-word
13	<i>Hu hu</i>	Response	Compliance	Vocalisation
14	<i>Three</i>	Response	Compliance	1-word
15	<i>Bum</i>	Response	Compliance	1-word
16	<i>No</i>	Response	Compliance	1-word
17	<i>No</i>	Response	Compliance	1-word
18	<i>One</i>	Response	Compliance	1-word
19	<i>One</i>	Response	Compliance	1-word
20	<i>Wait</i>	Response	Imitation	1-word
21	<i>Hum</i>	Response	Compliance	1-word
22	<i>Humps</i>	Response	Compliance	1-word
23	<i>No</i>	Response	Imitation	1-word
24	<i>Ca</i>	Response	Compliance	Vocalisation
25	<i>Horrse</i>	Response	Compliance	1-word
26	<i>One</i>	Initiation	Attention/show off	1-word
27	<i>Apple</i>	Response	Give information, clarification	1-word
28	<i>Green</i>	Response	Imitation	1-word
29	<i>Apple</i>	Response	Compliance	1-word
30	<i>Apple</i>	Response	Compliance	1-word
31	<i>Two</i>	Response	Compliance	1-word
32	<i>Three</i>	Initiation	Attention/show off	1-word
33	<i>Now</i>	Response	Imitation	1-word
34	<i>Two</i>	Response	Compliance	1-word
35	<i>Red</i>	Response	Imitation	1-word
36	<i>One one</i>	Initiation	Request/action	2-word
37	<i>One apple</i>	Initiation	Turn-taking	2-word
38	<i>Three</i>	Response	Compliance	1-word
39	<i>One</i>	Response	Turn-taking	1-word
40	<i>No</i>	Response	Compliance	1-word
41	<i>Apples</i>	Response	Compliance	1-word
42	<i>Apple</i>	Non-interactive / no-response	Ignore	1-word
43	<i>Apple</i>	Non-interactive / no-response	Ignore	1-word
44	<i>Frogs</i>	Response	Give information, clarification	1-word
45	<i>One</i>	Response	Compliance	1-word
46	<i>Con</i>	Response	Compliance	Vocalisation
47	<i>Two</i>	Response	Compliance	1-word
48	<i>Gummy three</i>	Response	Compliance	2-word
49	<i>Five</i>	Response	Compliance	1-word

50	<i>Eating</i>	Initiation	Turn-taking	1-word
51	<i>Yum yum</i>	Response	Turn-taking	2-word
52	<i>Three poo poo</i>	Initiation	Attention/show off	3+ word
53	<i>Eating</i>	Initiation	Turn-taking	1-word
54	<i>Cluck cluck</i>	Response	Turn-taking	2-word
55	<i>Pool</i>	Response	Compliance	1-word
56	<i>Eem emm</i>	Non-interactive / no-response	Ignore	Vocalisation
57	<i>Pool</i>	Response	Compliance	1-word
58	<i>Wee</i>	Response	Compliance	1-word
59	<i>Two</i>	Response	Acknowledge	1-word
60	<i>Three green</i>	Initiation	Comment, shared attention	2-word
61	<i>Fro</i>	Response	Compliance	1-word
62	<i>Yumyum yum</i>	Response	Turn-taking	3+ word
63	<i>Yum yum</i>	Response	Imitation	2-word
64	<i>Pool</i>	Response	Compliance	1-word
65	<i>Cool</i>	Response	Compliance	1-word
66	<i>Glug, glug</i>	Response	Turn-taking	2-word
67	<i>Green glug glug glug</i>	Initiation	Turn-taking	3+ word
68	<i>Glug</i>	Response	Compliance	1-word
69	<i>Pool</i>	Response	Compliance	1-word
70	<i>Glug, glug, glug</i>	Response	Turn-taking	3+ word
71	<i>Three
</i>	Response	Compliance	1-word
72	<i>Three</i>	Response	Compliance	1-word
73	<i>Three</i>	Response	Compliance	1-word
74	<i>Four</i>	Response	Compliance	1-word
75	<i>Four</i>	Response	Compliance	1-word
76	<i>Five</i>	Non-interactive / no-response	Ignore	1-word
77	<i>Dfive dfive</i>	Response	Acknowledge	2-word
78	<i>Da da da</i>	Non-interactive / no-response	Ignore	Vocalisation
79	<i>Finished</i>	Response	Compliance	1-word
80	<i>Scarf scarf</i>	Response	Imitation	2-word
Keeva with Violet Pre-PD 3				
No.	Utterance	Role	Function	Length
1	<i>Rice cake</i>	Response	Give information, clarification	2-word
2	<i>Drink</i>	Response	Request/Action	1-word
3	<i>No</i>	Response	Imitation	1-word
4	<i>No</i>	Response	Imitation	1-word
5	<i>Tic tic tic</i>	Response	Compliance	1-word

6	<i>Crying</i>	Non-interactive /no-response	ignore	vocalisation
7	<i>Mmm</i>	Response	Compliance	vocalisation
8	<i>Crying</i>	Response	Refusal/Protest	vocalisation
9	<i>Crying</i>	Response	Refusal/Protest	vocalisation
10	<i>riding</i>	Response	Compliance	1-word
11	<i>Crying</i>	Initiation	Refusal/Protest	vocalisation
12	<i>Climb</i>	Response	Compliance	1-word
13	<i>Brushing</i>	Response	Compliance	1-word
14	<i>Writing</i>	Response	Compliance	1-word
15	<i>Writing</i>	Non-interactive /no-response	ignore	1-word
16	<i>Crying</i>	Initiation	Refusal/Protest	vocalisation
17	<i>Crying</i>	Non-interactive /no-response	ignore	vocalisation
18	<i>Crying</i>	Response	Refusal/Protest	vocalisation
19	<i>Crying</i>	Response	Refusal/Protest	vocalisation
20	<i>Tidy up</i>	Response	Compliance	2-word
21	<i>Cool</i>	Response	Compliance	1-word
22	<i>Dolly</i>	Response	Compliance	1-word
23	<i>Ball</i>	Response	Compliance	1-word
24	<i>Car</i>	Response	Compliance	1-word
25	<i>Teddy</i>	Response	Compliance	1-word
26	<i>Baby</i>	Response	Compliance	1-word
27	<i>Baby</i>	Non-interactive /no-response	ignore	1-word
28	<i>Dolly</i>	Response	Compliance	1-word
29	<i>Baby</i>	Response	Compliance	1-word
30	<i>Car</i>	Response	Compliance	1-word
31	<i>Teddy</i>	Response	Compliance	1-word
32	<i>Teddy teddy</i>	Initiation	Comment, shared attention	2-word
33	<i>Ball</i>	Response	Imitation	1-word
34	<i>Ball while trying to take the picture</i>	Non-interactive /no-response	ignore	1-word
35	<i>Ball</i>	Response	Imitation	1-word
36	<i>Ball</i>	Initiation	Attention/show off	1-word
37	<i>Teddy</i>	Response	Compliance	1-word
38	<i>Dolly</i>	Response	Acknowledge	1-word
39	<i>Teddy</i>	Response	Compliance	1-word
40	<i>Teddy</i>	Response	Imitation	1-word
41	<i>Ball</i>	Response	Compliance	1-word
42	<i>Ball</i>	Initiation	Attention/show off	1-word
43	<i>Well</i>	Response	Imitation	1-word

44	<i>Crying</i>	Response	Refusal/Protest	vocalisation
45	<i>One</i>	Response	Compliance	1-word

Keeva with Violet Post-PD 1

No.	Utterance	Role	Function	Length
1	<i>Yellow</i>	Initiation	Request/action	1-word
2	<i>Yes</i>	Response	Compliance	1-word
3	<i>Horse</i>	Response	Compliance	1-word
4	<i>Yellow</i>	Response	Request/action	1-word
5	<i>Painting</i>	Initiation	Give information, clarification	1-word
6	<i>Yeah</i>	Response	Acknowledge	1-word
7	<i>I want spill it</i>	Initiation	Request/Action	3+ word
8	<i>Plate</i>	Response	Give information, clarification	1-word
9	<i>Tea</i>	Response	Give information, clarification	1-word
11	<i>Mustard</i>	Response	Give information, clarification	1-word
12	<i>Shake, shake,, shake</i>	Initiation	Request/action	3+ word
13	<i>Shake</i>	Initiation	Request/Action	1-word
14	<i>Shake it</i>	Response	Request/Action	2-word
15	<i>Mustard.</i>	Response	Imitation	1-word
16	<i>Tea</i>	Initiation	Comment, shared attention	1-word
17	<i>Coffee</i>	Response	Imitation	1-word
18	<i>Coffee</i>	Initiation	Request/Action	1-word
19	<i>Coffee</i>	Initiation	Request/Action	1-word
20	<i>Coffee</i>	Response	Compliance	1-word
21	<i>Yes</i>	Response	Compliance	1-word
22	<i>Coffee</i>	Initiation	Request/action	1-word
23	<i>Hold it</i>	Response	Compliance	2-word
24	<i>Purple</i>	Initiation	Request/action	1-word
25	<i>Purple</i>	Response	Request/action	1-word
26	<i>Coffee yes</i>	Response	Request/action	2-word
27	<i>Cawkee</i>	Response	Request/action	1-word
28	<i>Hold it</i>	Initiation	Request/action	2-word
29	<i>Water</i>	Initiation	Request/Action	1-word
30	<i>Water yeah</i>	Response	Request/Action	2-word
31	<i>-Help</i>	Initiation	Request/Action	1-word
32	<i>Open</i>	Response	Imitation	1-word
33	<i>Wet</i>	Initiation	Comment, shared attention	1-word
34	<i>Finished</i>	Response	Compliance	1-word

35	<i>Baint</i>	Initiation	Request/action	1-word
36	<i>Pa..paint</i>	Initiation	Request/action	1-word
Keeva with Violet Post-PD 2				
No.	Utterance	Role	Function	Length
1	<i>Yellow</i>	Initiation	Request/action	1-word
2	<i>Yellow</i>	Response	Request/action	1-word
3	<i>Yellow</i>	Response	Give information, clarification	1-word
4	<i>I want ill it</i>	Response	Request/Action	3+ word
5	<i>Paint</i>	Initiation	Request/action	1-word
6	<i>Brush</i>	Response	Request/action	1-word
7	<i>In</i>	Response	Imitation	1-word
8	<i>Tissue</i>	Initiation	Request/Action	1-word
9	<i>Tissue</i>	Initiation	Request/Action	1-word
10	<i>Yellow</i>	Initiation	Request/Action	1-word
11	<i>Paint</i>	Response	Imitation	1-word
12	<i>Yellow</i>	Initiation	Request/action	1-word
13	<i>Pour</i>	Initiation	Request/Action	1-word
14	<i>No nawww</i>	Response	Refusal/protest	2-word
15	<i>Mustard</i>	Response	Compliance	1-word
16	<i>Spoon</i>	Response	Compliance	1-word
17	<i>Top on</i>	Response	Imitation	2-word
18	<i>Cat no</i>	-Response	Request information, clarification	2-word
19	<i>No</i>	Response	Refusal/Protest	1-word
20	<i>Moon</i>	Initiation	Request/Action	1-word
21	<i>Moon</i>	Response	Request/action	1-word
22	<i>Moon</i>	Response	Request/action	1-word
-23	<i>No</i>	Response	Refusal/Protest	1-word
24	<i>Green</i>	Initiation	Request/action	1-word
25	<i>Painting</i>	Initiation	Request/action	1-word
26	<i>Aahah</i>	Response	Request/action	Vocalisation
27	<i>Spill it</i>	Initiation	Comment, shared attention	2-word
28	<i>Squee</i>	Initiation	Request/Action	1-word
29	<i>Must</i>	Initiation	Request/action	1-word
30	<i>No</i>	Response	Refusal/protest	1-word
31	<i>No</i>	Response	Refusal/protest	1-word
32	<i>Green painting</i>	Initiation	Request/Action	2-word
33	<i>Green painting</i>	Initiation	Request/Action	2-word
34	<i>Peach (paint)</i>	Initiation	Request/action	1-word
35	<i>Paint</i>	Response	Imitation	1-word
36	<i>Painting</i>	Initiation	Request/action	1-word
37	<i>Ill it (spill it)</i>	Initiation	Request/action	2-word

38	<i>Squee</i>	Response	Imitation	1-word
39	<i>Chili</i>	Response	Request information, clarification	1-word
40	<i>I have shake shake</i>	Initiation	Request/Action	3+ word
41	<i>Face</i>	Response	Turn-taking	1-word
42	<i>Face</i>	Response	Turn-taking	1-word
43	<i>Face</i>	Response	Turn-taking	1-word
44	<i>Face</i>	Response	Compliance	1-word
45	<i>Yellow</i>	Initiation	Request/action	1-word
46	<i>Ear</i>	Response	Turn-taking	1-word
47	<i>Foot</i>	Response	Turn-taking	1-word
48	<i>Yellow yellow</i>	Initiation	Request/Action	2-word
49	<i>Yellow</i>	Response	Request information, clarification	1-word
50	<i>Painting eeze (please)</i>	Initiation	Request/action	2-word
51	<i>I want ill it</i>	Response	Request information, clarification	3+ word
52	<i>Chilli</i>	Initiation	Request/Action	1-word
53	<i>Shake shake sha</i>	Initiation	Request/action	3+ word
54	<i>Ouch shake shake</i>	Response	Request/action	3+ word
55	<i>Naaw</i>	Response	Refusal/Protest	1-word
56	<i>"T"</i>	Response	Turn-taking	Vocalisation
57	<i>Whimper</i>	Response	Refusal/Protest	Vocalisation
58	<i>Cold</i>	Initiation	Comment, shared attention	1-word
59	<i>Greech (green)</i>	Initiation	Request/Action	1-word
60	<i>Gree (green)</i>	Response	Request/Action	1-word
61	<i>Painting</i>	Response	Compliance	1-word
62	<i>Yes</i>	Response	Compliance	1-word
63	<i>Want paint</i>	Response	Compliance	2-word
64	<i>Paint, I want ill it</i>	Initiation	Request/Action	3+ word
65	<i>Squeeze</i>	Response	Compliance	1-word
66	<i>Squee</i>	Response	Imitation	1-word
67	<i>Squee squee</i>	Initiation	Request/Action	2-word
68	<i>Chilli</i>	Initiation	Request/Action	1-word

Keeva with Violet Post-PD 3

No.	Utterance	Role	Function	Length
1.	<i>Yellow</i>	Initiation	Request/action	1-word
2.	<i>Peating (painting)</i>	Initiation	Request/Action	1-word
3.	<i>I want painting</i>	Initiation	Give information, clarification	3+ word
4.	<i>Hold it, I want</i>	Initiation	Request/Action	3+ word

5.	<i>I want hold it (I want hold it)</i>	Response	Request information, clarification	3+ word
6.	<i>Mudard (mustard)</i>	Initiation	Request/action	1-word
7.	<i>Mudar mudar (mustard, mustard)</i>	Initiation	Request/Action	2-word
8.	<i>Poo-poo plee (purple please)</i>	Response	Request/action	2-word
9.	<i>Yeeah</i>	Response	Compliance	1-word
10.	<i>Aaah</i>	Response	Refusal/protest	1-word
11.	<i>Green painting</i>	Initiation	Request/Action	2-word
12.	<i>I want ill it (spill it)</i>	Initiation	Give information, clarification	3+ word
13.	<i>I squee (I am squeezing)</i>	Initiation	Comment, shared attention	2-word
14.	<i>Shake, shake</i>	Initiation	Request/Action	2-word
15.	<i>I want ill it (spill it)</i>	Response	Give information, clarification	3+ word
16.	<i>Yeee</i>	Initiation	Request/action	Vocalisation
17.	<i>Peat (paint) I want spill it</i>	Initiation	Request/Action	3+ word
18.	<i>Peat, I want bl</i>	Response	Give information, clarification	3+ word
19.	<i>Painting I want hill it</i>	Response	Request/Action	3+ word
20.	<i>Coffee</i>	Response	Request information, clarification	1-word
21.	<i>I want ill it (I want to pour it)</i>	Initiation	Request/Action	3+ word
22.	<i>No</i>	Response	Refusal/protest	1-word
23.	<i>Naaw</i>	Response	Refusal/Protest	1-word
24.	<i>Yellow</i>	Initiation	Request/action	1-word
25.	<i>I want yellow</i>	Initiation	Request/Action	3+ word
26.	<i>Peat, I want ill it (paint I want spill it)</i>	Initiation	Give in-formation, clarification	3+ word
27.	<i>Peatting (painting)</i>	Response	Request information, clarification	1-word
28.	<i>Painting gold</i>	Response	Request information, clarification	2-word
29.	<i>Yeaah</i>	Response	Acknowledge	1-word
30.	<i>Naw</i>	Response	Refusal/protest	1-word
31.	<i>Laughing</i>	Response	Acknowledge	Vocalisation
32.	<i>Laughing</i>	Response	Acknowledge	Vocalisation
33.	<i>I have hold it</i>	Response	Request information, clarification	3+ word
34.	<i>Tissue</i>	Initiation	Request/action	1-word

35.	<i>Choo</i>	Initiation	Attention/show off	1-word
36.	<i>Green painting</i>	Initiation	Request/Action	2-word
Keeva with Heidi Pre-PD				
No.	Utterance	Role	Function	Length
1	<i>Yes</i>	Response	Compliance	1-word
2	<i>Gloves gloves</i>	Initiation	Request/action	2-word
3	<i>Gloves</i>	Initiation	Request/Action	1-word
4	<i>Gloves</i>	Response	Request/action	1-word
5	<i>Yes</i>	Response	Compliance	2-word
6	<i>No</i>	Response	Imitation	1-word
7	<i>Glove</i>	Response	Compliance	1-word
8	<i>Glove</i>	Response	Request/Action	1-word
9	<i>Glove</i>	Response	Compliance	1-word
10	<i>Yes</i>	Response	Compliance	1-word
11	<i>Crying...</i>	Non-interactive / no-response	Ignore	Vocalisation
12	<i>Moaning</i>	Response	Refusal/protest	Vocalisation
13	<i>Glove</i>	Response	Compliance	1-word
14	<i>Yes</i>	Response	Request/action	1-word
15	<i>Glove no</i>	Response	Imitation	2-word
16	<i>Glove</i>	Response	Compliance	1-word
17	<i>Glove</i>	Non-interactive / no-response	Ignore	1-word
18	<i>Hiding</i>	Response	Imitation	1-word
19	<i>Keeva</i>	Response	Attention/show off	1-word
20	<i>Emem</i>	Response	Acknowledge	Vocalisation
21	<i>Ball</i>	Response	Refusal/protest	1-word
22	<i>Whining</i>	Response	Refusal/protest	Vocalisation
23	<i>Go</i>	Initiation	Request social routine	1-word
24	<i>Jump</i>	Initiation	Request/action	1-word
25	<i>Jump</i>	Response	Compliance	1-word
26	<i>Whining</i>	Response	Refusal/protest	Vocalisation
	<i>Light go on</i>	Initiation	Request/action	3+ word
27				
28	<i>Light</i>	Non-interactive / no-response	Ignore	1-word
29	<i>Eidillah</i>	Response	Compliance	1-word
30	<i>Yeah</i>	Response	Compliance	1-word
31	<i>Yes</i>	Response	Compliance	1-word
32	<i>Yes</i>	Response	Imitation	1-word
33	<i>Light</i>	Initiation	Request/action	1-word
34	<i>Whine</i>	Response	Refusal/protest	Vocalisation
35	<i>Scratch</i>	Response	Imitation	1-word
36	<i>Scratch</i>	Response	Imitation	1-word

37	<i>Tickle</i>	Response	Imitation	1-word
38	<i>Tickle</i>	Response	Imitation	1-word
39	<i>Glove (inaudible)</i>	Non-interactive / no-response	Ignore	1-word
40	<i>Whine</i>	Response	Refusal/protest	Vocalisation
41	<i>Glove</i>	Response	Give information, clarification	1-word
42	<i>Gloves</i>	Response	Refusal/protest	1-word
Keeva with Heidi Post-PD				
No.	Utterance	Role	Function	Length
1	Green	Initiation	Request/Action	1-word
2	Water	Response	Request information, clarification	1-word
3	I want squeeze	Initiation	Request information, clarification	3+ word
4	Squee	Response	Request/Action	1-word
5	Squeeze	Initiation	Request/Action	1-word
6	Want squeeze	Response	Compliance	2-word
7	More	Initiation	Request/Action	1-word
8	Empty	Response	Compliance	1-word
9	Red (pointing to it)	Initiation	Request/Action	1-word
10	Red water	Initiation	Give information, clarification	2-word
11	I want open help	Initiation	Request information, clarification	3+ word
12	Open	Response	Imitation	1-word
13	Open	Initiation	Request/Action	1-word
14	Yea	Response	Acknowledge	1-word
15	Yes	Response	Imitation	1-word
16	I want squeeze	Initiation	Request/Action	3+ word
17	Squeeze	Initiation	Request/Action	1-word
18	Water	Initiation	Request/Action	1-word
19	Cup	Initiation	Request information, clarification	1-word
20	Yea	Response	Acknowledge	1-word
21	Cuip	Initiation	Request/Action	1-word
22	Cup	Initiation	Request/Action	1-word
23	Juice	Initiation	Give information, clarification	1-word
24	Water	Initiation	Request/Action	1-word
25	Water yea	Response	Acknowledge	2-word
26	Want squeeze	Initiation	Request/Action	2-word
27	Cup	Response	Acknowledge	1-word
28	Cloth	Initiation	Give information, clarification	1-word

29	Cup	Initiation	Request/Action	1-word
30	In the cup (in the cup)	Initiation	Give information, clarification	3+ word
31	Pour in cup	Response	Give information, clarification	3+ word
32	Cup, cu	Initiation	Request/Action	1-word
33	I want in cup	Response	Request information, clarification	3+ word
34	In cup	Response	Compliance	2-word
35	Help tissue	Response	Request information, clarification	2-word
36	Cup	Initiation	Request/Action	1-word
37	E e cup (in the cup)	Initiation	Request information, clarification	3+ word
38	Pour it (is this compliance or giving information/clarification)?	Response	Give information, clarification	2-word
39	I want tissue	Response	Request information, clarification	3+ word
40	Help	Response	Request/Action	1-word
41	Help please	Initiation	Request/Action	2-word
42	There you	Initiation	Request social routine	2-word
43	Pour	Initiation	Request/Action	1-word
44	Pour	Response	Imitation	1-word
45	Pour	Initiation	Request/Action	1-word
46	E	Response	Acknowledge	1-word
47	Yellow water	Initiation	Request/Action	2-word
48	Big water	Initiation	Request information, clarification	2-word
49	Water	Response	Give information, clarification	1-word
50	Open help	Initiation	Request/Action	2-word
51	Help	Initiation	Request/Action	1-word
52	Help	Initiation	Request/Action	1-word

Appendix 40: Rate of Pupils' Protests & Percentage of time spent in Positive Interactions

Student & Teacher	Shanbailey		Clonadoo		Windyvale		Bridgeport		Grindstone	
	Charlie - Ella		Freddy - Siofra		Elana - Yana		Keeva - Violet		Trevor - Maddie	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Rate: Protest/Refusal	1.1	0.3	0.9	0.6	2.0	0.8	0.9	1.3	0.4	0.1
Duration & % of sessions in positive interaction	10.2 min (34%)	23.7 min (80%)	12 min (42%)	22.2 min (76%)	11.9 min (43%)	24.6 min (81%)	12.5 min (41%)	17.9 min (57%)	18 min (51%)	7.6 min (76%)

Student & SNA	Charlie - Nuala		Freddy - Sunita		Elana - Kim		Keeva - Heidi		Trevor - Donna	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Rate: Protest/Refusal	0.5	0.9	1.2	2.0	7.2	0.9	1.5	0.7	0.5	0.5
Duration & % of sessions in positive interaction	5.3min (53%)	7.0 min (70%)	6.0 min (54%)	7.4 min (70%)	5.2 min (59%)	7.2 min (83%)	2.5 min (27%)	7.7 min (76%)	5.8 min (59%)	9.7 min (94%)

Across Cases	Shanbailey		Clonadoo		Windyvale		Bridgeport		Grindstone	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Rate of protest/refusal within cases	0.8	0.45	0.97	0.85	4.6	0.82	1.05	1.15	0.42	0.57
% of time in positive interaction within cases	43.5%	75%	48%	73%	51%	82%	31.5%	66.5%	55%	85%