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Video Recording as a Tool for Assessing Children's Everyday Use of Features Targeted in Phonological Intervention

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Abstract

The last decades, speech and language pathology services have been subject to changes, and there has been a growing demand for intervention activities to be effective and evidence-based. The aim of the present study was to investigate if and how video recording can be used to assess the use of features targeted in phonological intervention, in everyday talk by children with LI. Three five-year-old girls with phonological problems participated in the study, and data consist of video recordings of intervention sessions and of interaction at home. Three different paths of development were identified: Some targeted speech sounds are displayed in everyday interaction; Targeted speech sound is present in intervention-like activity; No displays of targeted sounds. The results of the present study clearly demonstrate that the use of video recordings, transcriptions and analysis of interaction outside of the clinical setting contribute important information that may guide planning, goal-setting and evaluation of intervention.

Introduction

The last few decades, speech and language pathology services in Sweden have been subject to great changes. There has been a growing demand for intervention activities to be proven effective. At the same time, health services are required to produce high quality care without extended resources. Thus, it is crucial that the clinician, for each individual client, makes optimal choices in the process of selecting what to treat, what methods to use, and the frequency of intervention sessions. Furthermore, the clinician must evaluate the selected intervention goals. Measuring outcome is difficult, since the result is affected by how and when the intervention was carried out (Dodd, 2007). In Swedish clinical practice, the most common way to assess intervention outcome is to measure whether the client has acquired an intervention target or not. When the client is a child, this is usually done by picture naming tests. The motivation for this procedure is that it allows the speech language pathologist (SLP) to control to what extent the targeted form is used. In many cases, the same test material is used both at the first assessment and in order to evaluate the intervention at the end of the intervention period. By doing so, the SLP can make a simple calculation of the possible differences between pre- and post-therapy. In the present study, phonology and phonological intervention are in focus. Phonological development undergoes considerable change during the first four years of age. Phonological ability improves through increased capacity to produce adult sounds and combine them into more complex phonological structures (Ingram, 1979:133). Swedish children basically follow the same pattern of phonological acquisition as children in English speaking countries (Nettelbladt, 1983).

The kind of evaluation described above naturally provides important information about whether or not intervention has led to any improvement in the child's phonological skills. However, the question remains to what degree such test results are truly representative of the child's production in everyday communication? Can one be sure that what has been practiced in intervention, and subsequently also tested in a similar clinical setting, is also transferred into the child's mundane interactional practices? As Paul (2001) states, intervention can be regarded as successful only when the child is able to use the targeted forms and functions in everyday communication outside of the clinical setting. Considering how intervention for children is currently often performed (at least in Sweden), there are limitations in the possibilities that SLPs have to follow the children who are enrolled in intervention, in everyday settings.

One way of assessing language skills is to use video recordings of the children in different settings. To use analysis of video within speech and language pathology is not a new thing, but the extent to which it has been used in speech and language intervention for children, is fairly limited, and underlying methodological and theoretical approaches have varied. One methodological approach in which the use of video is of great importance is Conversation Analysis (CA; Schegloff, 2007). To date, there exist various CA-informed intervention methods that involve patients and their next of kin, such as the work by Beeke and colleagues; Better Conversations with Aphasia (<http://www.ucl.ac.uk/betterconversations/aphasia>), SPPARC (Lock et al., 2001) and Talking about speech (Gardner, 2006); conversation therapy methods not so commonly applied in Sweden. Although these methods do not necessarily assess the efficacy of intervention, what they have in common is that they utilize video as a resource in order to identify aspects of the patient's everyday interaction that might be targeted for intervention, and they actively involve people close to the patient in intervention processes. It should be mentioned, however, that there is an imbalance between the amount of work that has been conducted on different clinical groups. Whereas there exist a fair number of CA-studies (using video) on

adults with aphasia (refs.), far less has been done on children with language impairment (however, see Gardner and Forrester 2010; Merrills, 2009; Gardner, 2006; Tykkyläinen, 2010, Samuelsson and Plejert, 2014)

The CA-based intervention program “Talking about Speech” (Gardner, 2006), is designed for SLPs to use with school support assistants, students, and parents to enhance their implementation of therapy for children with speech sound problems (Gardner, 2006). The program covers different elicitation strategies, how to deal with “a good try”, and how to deal with errors. Video recordings of training sessions in clinics and at home with the parents are analysed by means of CA. This is followed by mutual watching of video clips in order to for example, shape the adult’s immediate responses to the child’s contributions within the sequence of therapy talk. The program was evaluated within a pilot study (Gardner, 2006) that demonstrated direct changes in adult therapy talk. After the program, the adult participants also felt more positive about their role in therapy, and had a greater understanding about the therapeutic process than before the program.

In a similar vein, Samuelsson and Plejert (2014) described the use of video-based retrospections in language intervention, where SLPs, children with LI, and their caretakers were asked to watch and comment on video-sequences of interaction from a variety of the child’s everyday settings (pre-school, play with friends), as well as from intervention in the SLP clinic. The results of the study showed the importance of raising participants’ awareness of well-functioning as well as less well-functioning interactional strategies, and how retrospective viewing of the child in various interactional contexts, created a possibility for the treating SLP to observe the child’s performance outside of the clinic. In addition, for caretakers to observe well-functioning strategies of their children, in therapy as well as in contexts outside of home, appeared to raise their motivation to actively participate in intervention activities (Samuelsson and Plejert, 2014).

Apart from CA-studies, there are related approaches, in which video has been a tool for observing, analysing, and adapting different behaviours and practices of children and adults in interaction. For example, It Takes Two To Talk – the Hanen Program (Pepper and Weitzman, 2004), is designed for groups of parents of children with speech and language problems. Parents and children are video recorded throughout the program, and the recordings are used to coach parents in how to adapt their communicative behaviour to their child’s level of development. Evaluation studies have revealed that the program did not bring about change in children’s receptive and expressive language skills. However, positive changes were observed in children’s social interaction skills (Coulter and Gallagher, 2001; Pennington et al., 2009).

The Marte Meo method uses video in a similar fashion as the Hanen Program. Marte Meo was originally designed for children with behavioural problems and analysis and intervention are its two basic elements (Aarts, 2000). The focus of the program is to help the parent or the teacher to identify the communicative needs of the child, and to stimulate a modification of the adults’ communicative behaviour. By the end of the program, the adult participant is instructed to practise new types of behaviour in everyday situations. However, the program is not specifically used with children with LI.

Many studies report positive gains after the use of video self-modelling (VSM). In VSM, the child watches and learns from his/her own positive behaviour. The method comprises both filming and editing with focus on selecting exemplars of the desired behaviour (Buggey,

2012). Most research has been carried out on social skills in children with autism spectrum disorders (Coyle and Cole, 2004; Litras, Moore and Andersson, 2010), and in children and adolescents with stuttering.

The approaches reported on above, make different use of video-analysis for the purpose of intervention, and demonstrate the usefulness of recording, analysing and watching the films in order to raise participants' awareness of their interactional behaviours, generating information useful to caregivers as well as therapists. Having said this, it is still the case that video analysis has so far not been used for investigating and assessing children's progress in terms of whether or not features practiced in intervention, are carried over to everyday interaction.

Aim

The aim of the present study is to investigate if and how video recording can be used as a tool for assessing the potential use of features targeted in phonological intervention, in everyday talk by children with LI.

Method and materials

Three five-year-old children, Hanna, Ester, and Saga, with mild to moderate language impairment (LI) participated in the study, (in Swedish clinical practice this diagnosis also covers phonological impairment). None of the children was able to read. They were recruited from speech and language clinics in the South East of Sweden. Other participants were two SLPs working with the children, and parents (see table 1).

Table 1. Overview of participating children.

Name	Sex	Age	Diagnosis
Hanna	F	4:10	Phonological LI
Ester	F	4:11	Phonological and grammatical LI
Saga	F	5:0	Phonological and grammatical LI

The data consist of video recordings (253 minutes) from two settings involving each of the children with LI: Speech and language therapy sessions and interactions with family and friends at home (see table 2). Interviews were also carried out with participants (see table 2). The recordings at home were made in close relation time-wise to the recorded intervention sessions for all three participants.

Table 2. Overview of the data.

Participant	Setting	Time	Type of data
Hanna	At home	10.07	Video
	At the pre-school	1.10.36	Video
	Intervention	18.36	Video
	Retrospection, SLP, mother	46.12 1.19.03	Audio
Ester	At home	34.22	Video
	At the pre -school	1.18.41	Video
	Intervention	30.35	Video

	Retrospection	1.17.31	Audio
Saga	At home	2.15.00	Video
	At the pre-school	1.05.04	Video
	Intervention	25.06	Video
	Retrospection	1.32.51	Audio

Analysis

The emic stance taken within CA (Sidnell, 2010), influenced how the recordings of interaction from intervention and everyday talk involving the children with LI, were analysed. In addition, multimodal features of interaction (Mondada, 2006), were also taken into account. For people (adults as well as children) with a communicative disability, it may be of great importance to pay attention to other features of communication than merely verbal signals, as gestures, gaze, body posture etc. may function as important complementary resources when verbal means are not sufficient to achieve a satisfactory degree of mutual understanding (Clark, 1996).

The first step of analysis entailed watching the recordings numerous times by each author separately, identifying phenomena of relevance in terms of features targeted in intervention, and their potential use or not by the children with LI in everyday settings. The second step entailed data-sessions with the three authors together, where the observations and phenomena found by each author respectively were discussed until a consensus was reached, e.g. in terms of the children's use of a specific phonological feature.

The content of the interviews with the SLPs and with the parents of the participating children was analysed by all authors, and functioned as background information of the intervention regarding goals and content of intervention as reported by the SLPs, and perceived by the care-takers.

Results

The results of the present study demonstrate that video recordings of everyday interaction may be used in order to evaluate children with LI's everyday use of features targeted in intervention. In the present material, three different paths of development were identified. For the first participant, some of the targeted speech sounds are displayed in everyday interaction; for the second participant, the targeted speech sound is present in an intervention-like activity at home, and for the third participant there are no displays of any targeted feature in the everyday settings. In order to illustrate these paths, seven excerpts are presented and analyzed below, functioning as representative examples from intervention and everyday interaction for all three participants. All participants have met with their respective SLP several times, and they are familiar both with the SLP and with the activities at hand. The intervention mainly consists of different picture naming games focusing on the targeted sounds.

Some targeted speech sounds displayed in everyday interaction

The initial two excerpts depict Hanna in two different settings; in intervention and at home. Excerpt 1 is taken from an intervention session. Hanna and her SLP are sitting together, playing a game, which includes fishing for pictures from the Nuffield dyspraxia method (Williams et al, 2010), where each picture illustrates one sound (in this case the dripping tap illustrating the target sound /d/).

Excerpt 1

01 L: då ska vi se vi testar å fiska upp dom får vi se hur de går
then shall we see we try to catch them we'll see how it goes
02 P: (0.9)
03 L: får ju tänka att de ska låta d hela tiden i börj[an]
must consider that it should sound d all the time in the
begin[ning
04 H: [nd]
05 L: d d d
06 P: (2.3)
07 L: lägger vi ut dom här och blandar runt dom
we spread them out here and mix them
08 P: (5.7) ((arranges the cards on the table while H is fixing the
fishing cane))
09 L: hur går de me snöret (.) ska vi ta (.) oj vi får nästan ta ner
10 de lite va
how's the string (.) should we take (.) oh we must almost take
it down a bit right
11 P: (2.5)
12 L: behöver inte ta ner hela men lite granna
don't have to take down the whole but a little bit
13 H: sådär (voiceless phonation)
like that
14 L: sådär kanske
like that perhaps
15 P: (3.4) ((H is fishing))
16 L: oj va va de nu då de va ju den
oh what what was that now then it was that one
17 H: (g)ika
(d)rink
18 L: juste (0.3) och den lät ju[↑]
right (0.3) and that sounded like[↑]
19 H: k
20 L: d ((points to her mouth))
21 H: g
22 L: här framme du vet om du tittar på mig ((points to her mouth))
here at the front you know if you look at me
23 H: d:
24 L: d ah precis=
d ah precicely=
25 H: =d

The second excerpt is taken from an interaction between Hanna and her mother at home, and they are talking about Hanna's toy pets. The mother stands behind the camera, and talks to Hanna, who is playing with her brother.

Excerpt 2

M= Mother B1= Brother, H=Hanna, P=Pause

- 01 M: vilka mer bor där med hamstern [då]
who else are living there with the hamster [then]
- 02 B1: [ena] (1.2) äna
[ena] (1.2) äna ((play words))
- 03 H: domma ((points to the animals with a circular movement))
those
- 04 B1: mm
- 05 H: ni gång [jexx]
you that [jexx]
- 06 M: [ska du] ska du berätta va dom heter
[will you]will you tell their names
- 07 B1: äna kom ti pa[ppa]
äna ((play word)) come to da[ddy]
- 08 H: [n: u] vi se
[n:ow] we see
- 09 P: (0.8)
- 10 H: den hete
it's called
11. P: (0.9)
- 12 B1: [de:n]
[it]
- 13 H: [Timon] Mejon
[Timon] Mejon
- 14 B1: Timon å Simon
Timon and Simon
- 15 H: NEJ (.) han heter Micke Jackon han e guegi (.) han he gueg (0.3)
han hete muek
NO (.) his name's Micke Jackson he's guegi?? (.) he is gueg (0.3)
his name is Muek

In excerpt 2, Hanna's mother is asking for the names of the pets living in a box that Hanna uses as a house for them (line 01). In response, Hanna gives a minimal response using the demonstrative pronoun "domma (those)", pointing to the animals (line 03). This is confirmed by Hanna's brother (line 04). Hanna continues talking to the toys as part of the play (line 05). Hanna's mother then asks her to name the toy pets (line 06), which she does in a slightly hesitant way (lines 08, 10 and 13). The brother repeats the names, possibly to secure his understanding of the names (line 14). The suggestion of names provided by the brother, is objected to by Hanna, who seems to have changed her opinion about of the names of the pets, now claiming that one of the names is "Micke Jackon"(line 15).

In Excerpt 2, Hanna's mother tries to engage Hanna in conversation, possibly induced by the fact that they are instructed to record interactions at home. However, the sequence is informative regarding Hanna's use of the dental stops /d/ and /t/ which are targets of Hanna's intervention. The production of /d/ in "domma" (line 03) and "den" (line 10) is clear as well as the production of /n/, but the "t" is probably produced somewhere in between a velar and a dental stop, sounding slightly palatalized. The uncertain production generates a clarification request in the shape of a candidate understanding from Hanna's brother. This type of repetition is frequently used in interaction with children with language impairment (Plejert and Samuelsson, 2008).

Targeted speech sound present in intervention-like activity

SLP=L, Ester=E, P=Pause

Ester and her SLP have been playing the game for a couple of minutes, and Ester has turned a card showing a foal. The SLP describes the picture and asks Ester to name it (line 54). Ester responds by using a circumscription of the target word (line 56). The SLP asks for further specification (line 57), but Ester shakes her head, indicating that she does not know the word (line 58). The SLP produces the target word with a prolongation of the target sound /f/ (line 59), and Ester repeats this word without any request from the SLP (line 61). Since Ester produced the word with target dental stops as velars, the SLP asks for another try, and she prompts the sound both by reminding of the rocket, and by producing an elongated /f:/ (line 62). Ester picks up on this prompt, and produces the target word with an initial /f/ (line 63). Ester's production is confirmed and repeated by the SLP (line 65), which overlaps with a new attempt by Ester to produce the target word (line 66). This is confirmed by a "right" from the SLP (line 67).

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Excerpt 4 below, is extracted from a recording where Ester is playing the same memory game as in the example above with her older brother. The excerpt illustrates how the game exercise is adopted by Ester, when she does the same thing at home as in intervention.

Excerpt 4

Ester=E, Father=F, Brother=B, P=Pause

01 P: (1.9) ((children looking towards the camera))
 02 E: **din tuj blacka ((din tur Sebastian))**
 your turn Sebastian
 03 P: (3.6) ((sound of running water))
 04 E: **nu ka ja täja ((nu ska jag säga))**
 now will I say
 05 P: (4.1) ((E's brother moves his hand above the cards))
 06 F: **va ska ni säga då**
 what will you be saying then
 07 P: (4.7) ((E's brother shrugs his shoulders))
 08 B: **inte vet ja**
 I don't know
 09 E: **(t)yлле å(j) (t)yлле *å(j) ((fyller år))**
 have a birthday have a birthday
 10 P: (0.8)
 11 F: **f::h**
 f::h
 12 P: (0.7)
 13 E: **f:yлле år**
 have a birthday
 14 P: (2.0) ((E's brother turns up a card))
 15 E: **f::å[(x)**
 (sheep)
 16 B: **[får**
 [sheep
 17 P: (1.7) ((brother turns card))
 18 E: **jacken jände du den? ((Sebastian vände du den))((turns a card))**
 Sebastian turned you that?
 19 P: (1.9) ((Ester looks at some other cards))
 20 E: **fem (0.6) ((noise)) vågej ((fågel))(1.8) din tuth**
 five (0.6) ((noise)) bird (1.8) your turn
 21 P: (1.8) ((E's brother turns a new card))
 22 B: **fi:=**
 fi:=
 23 E: **=e he he ((laughs? turns towards camera))**
 24 P: (0.8)
 25 E: **fi:**
 fi:
 26 P: (0.8)
 27 E: **f:[Ön(ster)**
 (window)
 28 B: **[fönster**
 [window
 29 P: (1.7) ((both children are turning cards))

Ester starts the game by telling her brother that it is his turn, demonstrating that she knows how the activity should be carried out (line 02). She adds that she is supposed to name the pictures (line 04). There is a fairly long pause in the talk, while Ester's brother moves his hand above the cards. This might indicate that Ester's brother is not entirely sure about how the game proceeds. The children's father gets engaged, asking what they are supposed to say (line 06). Ester's brother responds by shrugging his shoulders, saying that he does not know (lines 07-08), but Ester continues the game by naming the pictures, using the same words as she did with the SLP during intervention (line 09). It should be noted, that Ester at this point

does not get the pronunciation correct. Her father picks up the target sound and produces a prolonged /f:/, possibly to correct Ester's previous production (line 11), and Ester repeats her naming of the picture with an initial /f/ (line 13). The father's explicit other-correction (Schegloff et al., 1977) thus appears to influence Ester's contribution positively in terms of pronunciation. Ester's brother then turns a card, but instead of him naming it, Ester comes in and names it (line 15). Her suggestion is then repeated by the brother (line 16). He continues the game, and Ester makes a remark on how the game should be played (line 18). Ester continues playing by turning cards, and naming them using initial /f/, which is the sound targeted in intervention (line 20). Her brother also names his card (line 22), and his choice of word is confirmed by means of a repetition by Ester (line 25). This pattern is repeated (lines 27-28), but this time it is Ester who is doing the naming, and her brother repeats.

In excerpt 4, it is Ester who takes on the leading role of the activity, showing epistemic stance (Heritage, 2012) similar to what the SLP did in excerpt 1. Even though Ester is the younger of the two siblings, she is the one who knows how the game should be carried out, and she also gives instructions to her brother. In this excerpt Ester produces the target sound /f/ without elicitation, apart from the early instance, in which her father steps in and provides a correction. Ester's successful use of the targeted sound is perhaps enhanced by the fact that she appears to play the part of the SLP in the activity. This might even indicate that she produces the target sound in what may be perceived as an enactment (Kindell et al., 2013) of the SLP.

Excerpt 5 is taken from a playful situation at home, where Ester and her brother are playing with pearls. The excerpt illustrates how Ester talks in a spontaneous, non-regulated situation, and it shows that she does not use any of the main target sounds of intervention, /f/, /s/ and /t/, but that there are productions of the /v/ and /d/, which are the cognate sounds of /f/ and /t/, respectively.

Excerpt 5

Ester=E, Brother=B, P=Pause

- 25 P: (7.1) ((both children involved with the pearls))
 26 E: **långk ia kommik**
 long we have come
 27 P: (4.5) ((Ester checks the pearlplate))
 28 E: **vill du ha blu keng ((vill du ha brun sen))**
 do you want brown then
 29 P: (1.2)
 30 B: **naä**
 no
 31 P: (0.7)
 32 E: **ike kei ken**
 which color then
 33 P: (5.1)
 34 B: **ja får fun:dera**
 I have to think
 35 P: (2.3)
 36 E: **nä du päla j**
 when you pearl ((Ester looks at her brother's face))
 37 P: (11.9) ((Brother checks the pool, Ester puts some pearls on the pearlplate))

This episode starts with a comment from Ester about how far they have reached (line 26), produced with dental stops produced as velars. This comment does not get any response, and Ester continues talking by asking her brother if he wants a brown pearl (line 28). In this question she uses an initial /v/ and initial /d/, but stops and backs the initial /s/ that should

have been used in "sen" (then). The brother responds minimally (line 30), and Ester continues with broadening her question (line 32), realizing all dentals and fricatives as velars. Her brother responds without correcting Ester in any way, and the interaction continues.

In excerpt 5, Ester is involved in a playful activity with her brother, and in this situation, Ester does not use speech sounds that she has worked with in intervention. However, this does not seem to generate any problems of understanding, since the brother does not ask for clarification or confirmation at any point in the interaction.

No displays of targeted sounds

Excerpts 6 and 7 below are from recordings of Saga. In her case, there are no instances where the speech sounds targeted in intervention are present. Excerpt 6 is taken from an intervention session, and Saga and the SLP are playing memory with pictures with words starting with the target sound /f/.

Excerpt 6

L= SLP, M= Mother, S= Saga

- 01 L: kom du ihåg det också ((S is getting a pair))
did you remember that too
- 02 M: vad var det på då
what was it on it then
- 03 S: fem bollar
five balls
- 04 M: f:em bollar
f:ive balls
- 05 L: juste
that's right
- 06 P: (1.0) ((the SLP arranges the cards))
- 07 S: [så]
[there]
- 08 L: [så] är det men hur blir det om: man låter f:: i början där då
hur blir de då
[that's] right but how is it if: you sound f:: in the beginning
there then how is it then
- 09 P: (0.6)
- 10 L: f::e
- 11 P: (1.1)
- 12 L: kan du låta så (.) f:em
can you sound like that (.) five
- 13 P: (0.5) ((S shakes her head))
- 14 L: det går inte
that's not possible
- 15 P: (2.9)
- 16 L: då ska vi se
then we'll see
- 17 P: (0.8)
- 18 L: fat men det hade vi väl ändå här nånstans var det där
plate but that we had anyway here somewhere was it there
- 19 S: n:äe
no:
- 20 L: johoh [titta nu fick]ja också jaha
yeah [look now I] also got yeah
- 21 S: [ja kunde]
[I could]
- 22 P: (1.1)
- 23 L: då är det jag igen (.) får
then it's me again (.) can
- 24 S: phåt tante ten e dä ((kanske den är där))
((then it maybe is there))

25 L: e den där tror du
 is it there you think
 26 P: (1.0)
 27 L: jag kommer inte ihåg faktiskt var det där
 I actually don't remember was it there
 28 S: nä=
 no=
 29 L: =fågel (.) nej
 =bird (.) no
 30 S: nä
 no
 31 P: (0.7)
 32 L: då är det du
 then it's you
 33 S: kåkel nu [igen] ((fågel nu igen))
 bird now [again]
 34 L: [fågel]
 [bird]
 35 S: deja
 there
 36 P: (1.1)
 37 L: juste
 that's right

Excerpt 6 starts with a comment by the SLP about Saga's remembering where the pictures are, giving her an advantage in the memory game. The SLP does not request naming of the pictures (line 01). Instead, Saga's mother asks Saga to name the pictures (line 02), which she does correctly, however replacing the initial /f/ with the stopped and dental realization of the target sound (line 03). Her mother makes an embedded correction by repeating Saga's contribution with a elongated initial /f:/ (line 04), which is also confirmed by the SLP (line 05). The SLP then makes a more explicit correction by asking for the /f/ (line 08), also demonstrating the sound (line 10). Neither the request nor the demonstration generate any production from Saga, and the SLP then continues with a direct request combined with a demonstration (line 12). Saga shakes her head as a negative response (line 13), and her inability to produce the targeted /f/ is confirmed by the SLP (line 14). The SLP then re-orientes to the game (line 15-18). The game continues accompanied by small-talk around the placements of the pictures (line 19-37).

This excerpt illustrates how the intervention is carried out, and it shows how the SLP in the beginning uses more or less soliciting elicitation strategies. Saga very clearly demonstrates that she does not want to produce the target /f/, which is treated by the SLP as an indication of her inability to do so. The fact that the SLP then continues the game without explicitly asking for correct productions, also indicates that her perception is that Saga is not able to produce an /f/-sound at this point.

Excerpt 7 is taken from a situation at home, where Saga and her mother talks about a photography session at the pre-school while Saga is painting a picture. The example illustrates how Saga's phonological problems, e.g. the stopping of the fricative /f/, which was targeted in intervention, causes difficulties for her mother to understand her.

Excerpt 7.

S= Saga, M= Mother

01 S: vi kulle pima ah då va ja jite ja va jite jät ja vik ita i kite
 02 kã tã va ja aj ((vi skulle filma ja då va ja lite ja va lite rädd
 ja fick sitta i Christers knä då va ja arg))

((we were to film yea and then I was a bit I was a bit scared I sat in Christer's lap then I was angry))

03 P: (1.0)

04 M: **va sa du att du gjorde**
what did you say you were doing

05 S: **e::h pi kulle ka kot**
((vi skulle ta kort))
((e::h we would take photos))

06 M: **a::=**

07 S: **=a tå patt ja pelv [ja va heklag]**
=a then I sat on my own[I was deadhappy]

08 M: **[satt du själv] va du skitglad**
[you sat on your own] were you deadhappy

09 S: **ja**
yea

10 P: (1.5)

11 M: **va bra:**
that's great

12 P: (1.5)

13 S: **och nån**
and someone

14 P: (1.2)

15 S: **en pi titta i ((en fick sitta i))**
((one had to sit in))

16 P: (1.1)

17 S: **i kitä kät ((i Christers knä))(0.3) Ma:ja**
((had to sit in Christer's lap)) (0.3) Ma:ja

18 M: **fick Maja sitta i Christers knä**
did Maja sit in Christer's lap

19 S: **inte: den andra Maja**
not: the other Maja

20 P: (1.4)

21 M: **den lilla Maja**
the small Maja

22 P: (0.7)

23 S: **nä: inte hon pi titta (.) den tova Maja**
no: not her had to sit (.) the big Maja

24 M: **den stora Maja**
the big Maja

25 S: **hon va jätten nuv ((hon va ledsen nu))**
she was sad now

26 P: (0.6)

27 M: **a::**

28 P: (1.0)

29 M: **va hon lessen**
was she sad

30 P: (0.9)

31 S: **ja vi kulle ka kot ((ja vi skulle ta kort))**
yea we would take photos

32 M: **va Maja lessen när ni skulle ta kort**
was Maja sad when you would take photos

In excerpt 7, Saga initiates a story of a photography event that took place in her preschool (line 01). Her mother does not understand her at this point, and asks for a repetition (line 04). Saga does not only repeat her first utterance, but revises it by dividing it into several shorter utterances (lines 05 and 07), which receives confirmation from her mother (lines 06, 08 and 11). She continues the story (lines 13-17), and the mother requests confirmation by means of a candidate understanding (line 18). Saga clarifies her previous contribution (line 19), and this is followed by a request for clarification about person reference by Saga's mother (line

21). Saga explains that it is not a matter of the “little Maja”, but the “big Maja” (line 23). This is followed by a candidate understanding by her mother about the somewhat surprising part of the utterance; the fact that it was the big Maja (and not the younger Maja) who was allowed to sit in the teacher’s lap (line 23). Saga explains why this was the case (line 25), and this is also repeated by the mother as a confirmation check (line 29). The sequence is closed by Saga repeating the main theme of the story, the photography event (line 31), and the mother summarizes the story (line 32).

This last excerpt demonstrates how the phonological problems cause problems in interaction leading to the need for clarification requests and confirmation checks (lines 04, 18, 21, 24, and 29). However, it also demonstrates Saga’s interactional competence, as well as the well-functioning strategies used by the mother that makes the talk proceed. In relation to the targeted /f/ of the intervention, it is also worth noticing that Saga produces the voiced cognate sound /v/ on several occasions (lines 01, 07, 23, 25, and 31).

In sum, the results demonstrate how video recording may be used in order to capture if and how features targeted in intervention are displayed in everyday interaction at home. It is shown how the three participants are at different stages in their phonological development; Hanna makes use of the sounds she has worked on in intervention, Ester makes use of a targeted sound in a specific activity, and Saga is not able to use the targeted /f/, but uses the voiced cognate /v/.

Discussion

The aim of the present study was to investigate the possibilities of using video recordings, transcriptions and analysis as a tool for goal setting, goal revision, and evaluation in clinical intervention for children with speech and language impairment. The results indicate that video recording, transcription, and analysis may provide valuable information in order to gain insights into what features cause problems in the child’s everyday interaction, as in the case of Saga (excerpt 7), and of what features targeted in intervention that are transferred into everyday interaction, as in the case of Hanna (excerpt 2). In Hanna’s case the video recordings may also be used in order to decide when to move on to a new target of intervention. The spontaneous use of /d/ and /n/, and the sound approaching the targeted /t/, may suggest that /t/ needs further work in order to be produced correctly in spontaneous interaction, and that it might be fruitful to introduce a dental fricative like /s/. In Saga’s case, analyzing the video recording and the transcripts might also have suggested choosing another target sound, since the targeted sounds are not at all used in spontaneous interaction.

Video recordings of interaction at home may also render information about which sounds seem to be under development and therefore suitable as the next step of intervention, as in the case of Ester, where cognate sounds of the targeted speech sounds are produced in spontaneous interaction (excerpt 5). The SLP may also have considered /f/ to be established, since it is used in the game in intervention, but as demonstrated from the home video, this is the only activity where it is used. This may indicate that Ester’s perception of how this specific sound is supposed to be used is linked to the activity rather than to the linguistic form. This way of evaluating intervention by recordings of interaction at home makes the evaluation, and thus also the intervention, more ecologically valid, which is beneficial in order to get around the problems of measuring outcome described in previous research (Dodd, 2007), and more in line with what Paul (2001) states as intervention only being successful if targeted forms are used also outside of the clinical setting.

The CA-based approach with video recording, transcription, and analysis is important, as it adds to the possibilities of making valid assessments of what actually happens in interaction. Even if the present analyses did not focus so much on multimodal features of interaction such as gaze, gestures, or body movements, video was an efficient tool in order to obtain visual information concerning how specific speech sounds were produced. Films also provided information about how activities were carried out. In clinical practice, the use of video may thus be essential in order to study the use of features that are targeted in intervention.

A similar approach as the one suggested here has been used successfully in aphasia therapy (Beeke et al., 2011; Locke et al., 2001), but so far not in any systematic way in intervention for children with the exception of “Talking about Speech” (Gardner, 2006). However, in “Talking about Speech”, video recordings are only used in order to analyze and discuss training sessions, and no recordings are made of everyday interaction. The use of video recording may also be motivating for children as well as parents, and it has the potential to stimulate changes in children’s behavior, which has been demonstrated for Marte Meo (Aarts, 2000). Working with video could also be used in order to increase the parent’s use of well-functioning interactional strategies similar to what has been shown for the Hanen program (Pepper and Weitzman, 2004).

Nowadays, high quality video recordings can easily be made at home using smartphones. The recordings are small enough to be e-mailed to the SLP. Also, recordings can be made of sessions together with the clinician. The recordings can be used in various ways. Recordings at home can help the SLP determine if the intervention can be regarded as successful by controlling whether targeted forms are present in communication outside of the clinical setting. Also, recordings of everyday interaction at home provides the SLP with a better basis for choosing the appropriate next target form for each individual child. By accessing the filmed therapy sessions, the caretakers can mimic the work done at the clinic, and thus optimize the effectiveness of homework. The children might also become motivated by watching themselves engaged in training and it is possible that this might lead to positive self modeling.

Conclusion

The results of the present study clearly demonstrate that the use of video recordings, transcriptions and analysis of interaction outside of the clinical setting contribute important information that may guide planning, goal-setting and evaluation of intervention for children with LI.

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Bio statements

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