

# ORAL MOTOR PRAXIS IN INDIVIDUALS WITH AUTISM SPECTRUM DISORDERS IN THE CONTEXT OF MODERN SPEECH AND LANGUAGE THERAPY

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## **Abstract**

The objective of the submitted contribution is to describe the issue of oral motor praxis in individuals with autism spectrum disorders (ASD). The initial section of the contribution deals with the theoretical solutions relating to the given issue and, concurrently, provides information on the already implemented research focused on the given issue. The central domain is the analysis of oral motor ability in children with ASD through the application of the partial task activity 'Warm-up' from the software programme FONO 2. The results of the longitudinal observation are detected through the created evaluation scale and are recorded in the form of tables and graphs that are, subsequently, analysed. The results of the study constitute partial solutions of the specific research project IGA (IGA 2014/2015 PdF 2014\_016), which was implemented by the Institute of Special Education Studies of the Faculty of Education Palacký University in Olomouc (principal researchers: Kateřina Vitásková, Alena Říhová).

**Key words:** *autism spectrum disorders, oral motor praxis, speech and language therapy intervention, speech and language therapist*

## **Introduction to the Issue**

Autism spectrum disorders (ASD) belong amongst serious neurodevelopmental disorders, the deficits of which are obvious at early age (usually before the 3<sup>rd</sup> year of life) (compare Attwood, 2005; Hrdlička & Komárek, 2004; Thorová, 2006). The symptoms forming the clinical picture of ASD comprise both specific and unspecific symptoms pervasively determining the child's psychosocial development (Říhová et al., 2011). One of the distinct exhibitions of this disorder is an impairment affecting communication activity, which is obvious in pre-verbal vocalization and determines the ontogenesis of communication, the manifestation of which is noticeable in both verbal communication and, to a significant extent, in non-verbal communication. The impairment affects both the receptive and expressive components of communication and all language levels. Aberrations at the pragmatic language level (Říhová & Vitásková, 2012; Vitásková & Říhová, 2013; Vitásková & Říhová, 2014a) are primary and specific for ASD. According to Gillberg (Gillberg & Peeters, 2003), problems in the phase of canonical a vocalization at the level of the so-called instinctive babbling

appear in the period of the first year of the child's life. The given stadium is either missing or is highly monotone. Other typical symptom, in particular in the period of the so-called imitative babbling (post canonical vocalization), is the absence of the preference for pre-verbal vocalization as the incentive of communication (ibid). The given author also states that in this period, many parents often notice that their child does not react when called or they are not able to attract the child's attention. It is also usual that parents or, possibly, professionals (particularly paediatricians) speak about suspected hearing loss that is usually subsequently refuted on the basis of audio logical examination. In relation to children with ASD, Lewis and Wiener (cited in Hrdlička & Komárek, 2004) speak about crying and the period of imitating. They accentuate that a noticeable problem is, alongside the difficult detection of the cause of the child's cry, the ability to imitate both in the sphere of pre-verbal vocalization, oral motor ability and gesticulation. Teitelbaum, Teitelbaum, Nye, Fryman and Maurer (1998) refer to the video analysis of moves of children with ASD, revealing differences that are obvious already between the fourth and the sixth month of the child's age. They concern, specifically, differences in the sphere of oral motor ability and differences in achieving the development milestones of crawling, standing, sitting and walking (ibid).

In compliance with Lechta (2002), Příhoda (cited in Lechta, 2002) and Dittrichová, Papoušek and Paul (2004), we have to accentuate the role of motor activity and its narrow dialectical determination with regard to the development of speech. *“The development of motor activity is extraordinarily important not only for speech but also for the development of cognitive abilities, social behaviour, etc. If we understand the process of speaking, that is speech as a mechanical act, we can notice that it concerns precisely coordinated process of soft motor activity of the speech apparatus”*(Lechta, 2002, p. 19). An analysis of the motor activity (including oral motor activity) in children with ASD at early age was implemented by Fabbri-Destro, Gizzonio and Avanzini (2013) through video records and special testing methods. They detected differences in oral motor activity (between the 4<sup>th</sup> and the 6<sup>th</sup> months of the child's age) and, concurrently, spoke about the chronological inadequacy in crawling, standing, sitting, and walking and other motor skills, including graphomotor.

The motor abilities, which are significantly impaired, particularly, in individuals with Asperger syndrome (compare Paul, 2011), including the difficulties associated with the implementation of oral motor activities, are also accentuated by the following research. Ming, Brimacombe and Wagner (2007) carried out a retrospective clinical assessment focused on the specification and the incidence of motor ability deficits in individuals with ASD. The study, which was participated by 154 children with ASD, referred to the fact that 54 % of these individuals show symptoms of hypotonia that should partially disappear later ( $p=0.002$ ). According to the study, motor apraxia was exhibited by 34 % of the children and the so-called tiptoeing was noticed in 19 %. Even in case of motor dyspraxia and specific walking stereotypes, the authors of the research recorded gradual decrease that might be given, in their opinion, by the development aspect, the intervention techniques or, possibly, the perfusion of these two factors. However, despite the given circumstance, it still applies that the apparent motor deficits, in particular, at early age, may reflect, to a significant extent, on communication ability and oral motor praxis and may affect the development of communication and the manifestation of the symptoms specific to impaired communication ability in individuals with ASD (compare Mitchell, Brian, Zwaigenbaum, Roberts, Szatmari, Smith & Bryson, 2006). The oral and soft motor abilities (primarily the motor activity of the hand), their aberration in individuals with ASD and the predilection with regard to the ontogenesis of speech were dealt with in the video analysis carried out by Gernsbacherová, Sauer, Geye, Schweigert and Goldsmith (2007). The analysed data showed that the correlation between deficient motor activity and the ontogenesis of speech was very narrow — in the research, 115 individuals with ASD (64.5 %) showed

certain relationship between impaired motor ability and impaired speech development. The comparative study applied to children with ASD and individuals with developmental motor dyspraxia or ADHD through the Test Motor Proficiency by Bruininks-Oseretsky refers to the fact that the difficulties suffered by individuals with ASD and associated with motor coordination are determined by other circumstances ensuing from the basal characteristic of the given disorder. They concern, in particular, difficulties associated with the reception of a verbal instruction and, concurrently, with the imitation of the presented activity (Dewey, Cantell, & Crawford, 2007). Thus, the aforesaid show that the given problem is a complex issue and cannot be attributed only to deficient coordinated motor ability (or developmental coordination disorder — DCD). The imitation of motor skills is described, for example, by Mostofsky, Dubey, Jerath, Jansiewicz, Goldberg and Denckla (2006). In compliance with the stated authors (Dewey, Cantell, & Crawford, 2007), he refers to noticeable imitation aberrations in individuals with ASD, related, in his opinion, to neuroanatomical findings localized in the frontal, parietal and subcortical spheres, which are indispensable for learning and for receiving movement and sequences of the motor programme.

It can therefore be said that motor or oral motor abilities are a domain where individuals with ASD show significant insufficiencies. They are the predictors of ontogenesis of speech and, subsequently, determine communication ability. For these reasons, we consider as necessary to focus on the given issue from both research and professional speech and language therapy perspectives (compare Vitásková & Říhová, 2014b).

### **Research and Its Methodological Aspects**

The main objective of the research is to analyse oral motor abilities of children with autism spectrum disorder.

The partial objectives include:

- mapping of the oral motor abilities of children with ASD in the initial stage of the examination through the section ‘Warm-up’ from the software programme FONO 2 and through the created evaluation numerical scale;
- mapping of the oral motor abilities of children with ASD in the final stage of the examination through the section ‘Warm-up’ from the software programme FONO 2 and through the created evaluation numerical scale;
- comparison of the difference in evaluating the initial state of oral motor activity in children with ASD with its final state.

The research issues include:

- What is the state of oral motor abilities in a child with ASD in the initial stage of the research?
- What is the state of oral motor abilities in a child with ASD in the final stage of the research?
- Are there any differences in evaluating oral motor abilities in the initial and the final stages of the research?

The software, speech and language therapy programme FONO 2 applied as the principal evaluation method in individuals with ASD, is a multimedia programme intended for individuals with impaired communication ability and formed of 5 basic partial domains — warm-up, association, phonetic hearing, reading, and copying dactyl characters (*What is FONO?*, 2014). For research purposes, we selected the section ‘Warm-up’ comprising 37 activities. For analysis purposes, we selected 13 tasks:

1. *Smile without showing your teeth.*
2. *Smile with showing your teeth.*
3. *Purse your lips.*
4. *Bite your lower lip.*
5. *Bite your upper lip.*
6. *Open and close your mouth.*
7. *Move the jaw to the right and left.*
8. *Chomping.*
9. *Whistle.*
10. *Try to imitate biting.*
11. *Blow up your cheeks and make a 'puuu...'*
12. *Stick your tongue out between the upper and the lower teeth, keep it straight and tighten the tip.*
13. *Touch the middle part of your upper lip with your tongue.*

The activity pursued through the stated speech and language therapy programme is supported by visual form of the given exercise (the monitor displays a face with the correctly implemented activity), which provides the individual with ASD with visualisation and facilitation. The individual tasks are also accompanied by verbal instructions through recorded human voice. The third domain, which we consider as highly supporting, is visual feedback displaying the implemented motor activities along with the correct sample demonstration.

The principal research method is longitudinal observation that was implemented from March to June 2014. It concerns extrospective participant observation based on the set monitored domains and the designed evaluation items accompanied by graphical visualisation of the given software, which are regularly recorded and compared in each client within the given time interval. According to Ferjenčík (2000, cited in Miovský, 2006), the record of the observation is made through reductive description that is structured and focuses on the pre-set domains. The basic principal lies in the creation of a certain scheme consisting of general categories. During the observation of a specific phenomenon, it is then recorded through the given general categories.

The individual domains included in the evaluation of the thirteen Warm-up activities from FONO 2 stated above comprise:

- activity initialization;
- help with activity implementation;
- activity implementation correctness.

For the three fundamental domains stated above, we designed the following evaluation scale containing the relevant numerical values applied further within the analysis (Table 1).

### **Analysis of Research Results**

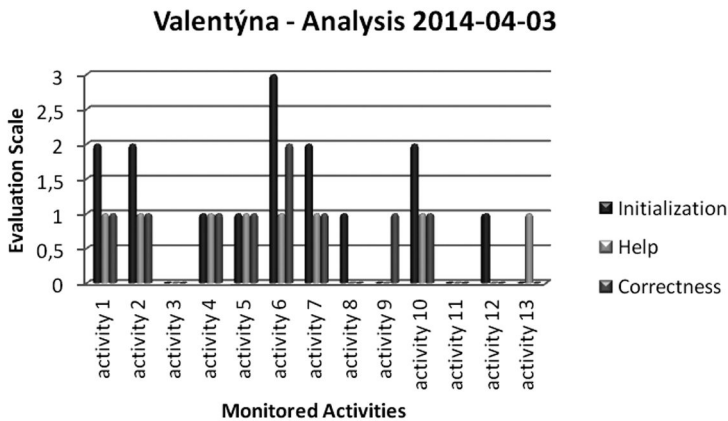
The client in whom the analysis of abilities in the sphere of oral motor activity was carried out is a girl called Valentýna. At the time of the research, Valentýna was 5 years old and was diagnosed with children's high-functioning autism. There were 11 speech and language therapy interventions implemented between 03 April 2014 and 05 June 2014. The oral motor exercises from the section 'Warm-up' from the software speech and language therapy programme FONO 2 were applied within the interventions. Speech and language interventions, which were mapped at the time of initializing (03 April 2014) and completing the research (05 June 2014), focused on a series of exercises stated in the introductory section

**Table 1.** Evaluation Scale

<p><b>Activity Initialization</b>                  0 — no activity initialized                  1 — activity initialized with help                  2 — activity initialized upon verbal instruction                  3 — activity initialized without help</p> <p><b>Help</b>                  0 — complete help with activity implementation needed                  1 — partial help with activity implementation needed                  2 — no help with activity implementation needed</p> <p><b>Exercise Implementation Correctness</b>                  0 — exercise implemented completely incorrectly                  1 — exercise implemented incorrectly, but partially correctly upon correction                  2 — exercise implemented incorrectly, but completely correctly upon correction                  3 — exercise implemented completely correctly</p>
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of the contribution (see the 13 activities selected from the software programme FONO 2) and on other domains developing the girls’ communication skills comprising, in particular, non-verbal communication (eye contact, mimics, gesticulation, posture), understanding, and pre-verbal vocalization.

The graphs below (see Figure 1 and Figure 2) represent the selected oral motor activities and visualise them based on three domains (initialization, help, and correct implementation) evaluated according to the scale designed by us (see the introductory part of the text).

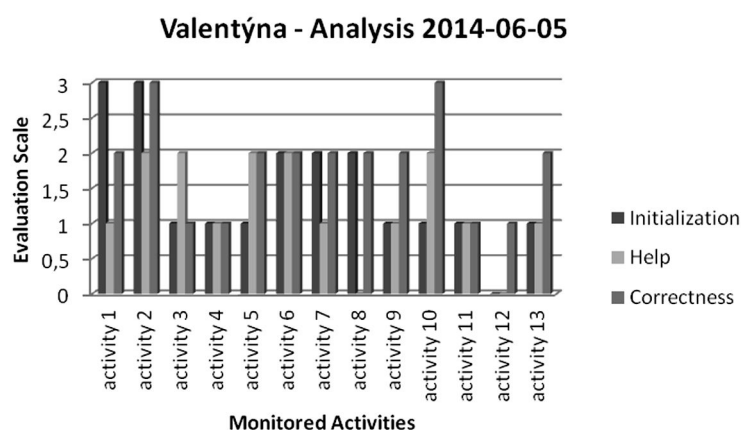


**Figure 1.** Valentyna — Analysis 2014-04-03

Figure 1 presents the evaluation of selected oral motor abilities of Valentyna as of 03 April 2014. The graph clearly shows that the girl’s oral motor activities are strongly deficient, which is obvious from the high frequency position (N = 14) [see Graph No. 1] of the lowest evaluation scale — Scale No. 0 implementing the absence of activity initialization, full help with activity implementation, and incorrect activity implementation. All of the stated lowest scores are present in activities No. 3 and No. 11. Thus, we can state that the given exercises are the most difficult for Valentyna. They concern the activities ‘Purse your lips’ and ‘Blow up your cheeks and make

*a puuu...*'. Activities No. 8, 9, 12 and 13, within which the zero value dominates, can also be considered as problematic. The specific tasks include *'Purse your lips/chomping???'*, *'Stick your tongue out between the upper and the lower teeth, keep it straight and tighten the tip'*, and *'Touch the middle part of your upper lift with your tongue'*. A significantly frequent presence (N=19) is represented by value No. 1 (see the significant prevalence in activities No. 4 and 5) relating to the activity initialization with help, substituting the need for help with activity implementation, and, concurrently, comprising incorrect implementation of the given activity, which is, however, possible to implement partially upon our correction.

On the contrary, focusing on the antagonistic positions relating to positive evaluation and trouble-free implementation, we can state that the highest evaluation scale No. 3 is present only in one activity. It concerns activity No. 6 *'Open and close your mouth'*, but only in case of activity initialization. Thus, it is obvious that the submitted activities are very problematic for Valentýna. The scale including value No. 2 (activity initialization upon verbal instruction, absence of the need for help with activity initialization, and correct activity implementation with help) is recorded in 5 activities, being activities No. 1, 2, 6, 7 and 10.



**Figure 2.** Valentýna — Analysis 2014-06-05

Figure 2 shows the evaluation of partial oral motor activities as of 05 June 2014. The decline in value No. 0, which persists only within one activity, being activity No. 12 *'Stick your tongue out between the upper and the lower teeth, keep it straight and tighten the tip'*, can be considered as positive with regard to the evaluation carried out on 03 April 2014. This activity is very difficult, in particular, for individuals with ASD. The reason for this activity being so difficult is, in particular, the fact that it consists of partial, interrelated tasks of highly abstract nature. The accompanying visual demonstration presented along with verbal instruction through the computer and the software programme FONO 2 is insufficient, which is the reason why the implementation of this activity is so problematic. Persisting issues can be seen in activities No. 4 and No. 11 in which the evaluation scale No. 1, relating to significant help and representing difficulties with activity implementation, prevails. They specifically concern the activities *'Bite your lower lip'* and *'Blow up your cheeks and make a puuu...*'. Value No. 2, which could be identified as the so-called medial position (except for help for which it represents the highest value), is prevalent. It is represented by frequency 15 in activities No. 1, 2, 3, 5, 6, 7, 8, 9, 10, and 13 and has positive representation in activity No. 6 *'Open and close your mouth'* within the three main domains of evaluation (initialization, help, correctness).

We can also see an increase in scale No. 3 that is noticeable in activities No. 1, 2 and 10 and that is present, within task No. 2, in both activity initialization and activity implementation. They concern the activities 'Smile without showing your teeth', 'Smile with showing your teeth' and 'Try to imitate biting'.

The following Table 2 offers a comparative view of all the described activities and the relevant evaluation scale with regard to the dates on which the research was commenced (03 April 2014) and completed (05 June 2014).

**Table 2.** Comparison of the Observed Oral Motor Activities of Valentyna

Observed activities with the individual evaluated domains and the relevant numerical scale									
Date: 3 April 2014					Date: 5 June 2014				
activity	initiali- zation	help	correct- ness		activity	initiali- zation	help	correct- ness	
1	2	1	1		1	3	1	2	
2	2	1	1		2	3	2	3	
3	0	0	0		3	1	2	1	
4	1	1	1		4	1	1	1	
5	1	1	1		5	1	2	2	
6	3	1	2		6	2	2	2	
7	2	1	1		7	2	1	2	
8	1	0	0		8	2	0	2	
9	0	0	1		9	1	1	2	
10	2	1	1		10	1	2	3	
11	0	0	0		11	1	1	1	
12	1	0	0		12	0	0	1	
13	0	1	0		13	1	1	2	
Stagnation					N= 11 (28.21 %) [I=3, D=6, S=2]				
Positive Balance					N= 25 (64.11 %) [I=7, D=7, S=11]				
Negative Balance					N= 3 (7.69 %) [I=3, D=0, S=0]				

The compared results displayed in Table 2 show that positive change is prevalent and highly noticeable. The stated positive results are recorded in 25 partial activities and represent 64.11 %. Congruent presence is represented by activity initialization (N=7) and help (N = 7). Slight prevalence (N=11) is given by the implementation of the given activity, which we consider as positive. These changes affect, in particular, growth that includes change in one evaluation scale. However, a difference including growth of both evaluation scales was detected in case of correct activity implementation. They specifically concerned activity No. 3 'Purse your lips' (correctness shift from 1 to 3; lips protrusion), activity No. 8 'Chomping' (correctness shift from 0 to 2), activity No. 10 'Try to imitate biting' (correctness shift from 1 to 3), and activity No. 13 'Touch the middle part of your upper lip with your tongue' (correctness shift from 0 to 2). These activities (N=4) underwent significant changes. We would like to highlight, in particular, activity No. 13 that is more difficult than others since it consists of two partial tasks. In case of the remaining positive balances forming a major part of positive growth (N=21), differences are obvious in one evaluation scale. We can state, for example, activity No. 1 'Smile without showing your teeth' (initialization shift from 2 to 3), activity

No. 2 *'Smile with showing your teeth'* (initialization shift from 2 to 3), or activity No. 8 *'Chomping'* (initialization shift from 1 to 2). Positive changes are also recorded in case of help, for example, in activity No. 5 *'Bite your upper lip'* (1→2), activity No. 6 *'Open and close your mouth'* (1→2), and activity No. 9 *'Whistle'* (0→1). Last but not the least, changes within one evaluation scale also relate to correct implementation of the particular activity. They concern, for example, activity No. 5 *'Bite your upper lip'* (1→2), activity No. 11 *'Blow up your cheeks and make a puuu'* (0→1), and activity No. 12 *'Stick your tongue out between the upper and the lower teeth, keep it straight and tighten the tip'* (0→1).

The evaluated domains stagnate, that is, no change is recorded within 11 activities (28.21 %) with respect to initialization of the research. They concern 3 activities within the initialization, 6 activities within the help, and 2 activities within the correctness. Of the specific tasks, the aforesaid relates to activity No. 4 *'Bite your lower lip'* (activity 1→1), activity No. 5 *'Bite your upper lip'* (activity 1→1), activity No. 1 *'Smile without showing your teeth'* (help 1→1), activity No. 13 *'Touch the middle part of your upper lip with your tongue'* (help 1→1), activity No. 4 *'Bite your lower lip'* (correctness 1→1), and activity No. 6 *'Open and close your mouth'* (correctness 2→2).

The least frequent item is negative balance, represented in 3 activities (7.69 %) relating to activity initialization — activity No. 6 *'Open and close your mouth'* (3→2), activity No. 10 *'Try to imitate biting'* (2→1), and activity No. 12 *'Stick your tongue out between the upper and the lower teeth, keep it straight and tighten the tip'* (1→0).

Despite the frequency-based representation given to all evaluated domains — stagnation, positive balance and negative balance -, it can be stated that positive balance, which can be perceived in Valentýna as a positive result of the implemented speech and language therapy intervention, significantly prevails (64.11 %).

### Conclusions

In conclusion, it can be stated that in the analysis of oral motor abilities it is possible to achieve positive results through systematic speech and language therapy intervention focused on the development of mobility in the oral-facial sphere. Of course, it is not possible to generalize these results. For this reason, it would be appropriate to carry out other, more detailed and longitudinal research in this sphere (compare Vitásková & Říhová, 2013).

The principal objective of the submitted contribution was to describe the possibilities of an efficiently implemented speech and language therapy intervention in individuals with ASD, focused on the motor abilities in the oral and oral facial spheres, through analysis of the selected oral motor exercises. It concerned an analysis of a child diagnosed with ASD, for whom the software speech and language therapy programme FONO 2, its partial section Warm-up, was used. Through the given programme, the client was offered visual form of the given exercise, sound instruction and visual feedback (depiction of the demonstrated activity). Due to the growing difficulty level of the activities and early tiredness, we chose 13 activities from the collection of 37 activities in total. For the activities specified in the introduction of this contribution, we created three fundamental domains — activity initialization, need for help, and activity implementation -, that were recorded in tables according to the evaluation scale designed by us, visualized through graphs and, subsequently, compared with the results at the time of initializing (March 2014) and completing (June 2014) the research.

Naturally, the research was limited and influenced by factors capable of determining its course. They concerned, in particular, the child's current physical and psychological states or external environment effects, including noise from the surrounding environment or too high or low temperature of the given environment. Furthermore, with regard to the gravity of the diagnosis and the significant deficits affecting, among other things, communication



ability, the period of the research (4 months) cannot be considered as long enough to record more significant results and, in particular, speak about possible stability of the positive results. Despite the stated circumstances, we tried to create conditions favourable for the implementation of the research.

The analysis of motor activities in the oral-facial sphere in Valentýna shows that with regard to the initial evaluation, positive changes were recorded in 4.11 % of the activities. However, these differences related to one evaluation scale only and an increase by only two numerical scales was recorded in 4 activities. They concerned the activities 'Purse your lips', 'Chomping', 'Try to imitate biting' and 'Touch the middle part of your upper lip with your tongue'. Thus, it is obvious that in Valentýna, these domains underwent significant changes, which must be considered as highly positive with regard to the relatively short time interval. A lower frequency-based position, even with regard to the first client and, concurrently, the next child with ASD, is held by stagnation of the evaluated spheres, corresponding to 28.21 %. A predominant part of this category is formed by more difficult activities, such as 'Touch the middle part of your upper lip with your tongue', 'Bite your lower lip' and 'Open and close your mouth'. Negative balance affecting only 3 activities, which may be evaluated as more complicated and difficult to implement by individuals with ASD and which include activity No. 12 'Stick your mouth out between the upper and the lower teeth, keep it straight and tighten the tip', was also detected in this client.

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### Summary

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The research problem. The symptoms forming the clinical picture of autism spectrum disorders (ASD) comprise both specific and unspecific symptoms pervasively determining the child's psychosocial development. The motor abilities might be significantly impaired in individuals with ASD, including the difficulties associated with the implementation of oral motor activities. Due to the fact that they are the predictors of ontogenesis of speech and, subsequently, determine communication ability, we consider as necessary to focus on the given issue from both research and professional speech and language therapy perspectives.

Aim. The main aim of the research was to analyse oral motor abilities of children with autism spectrum disorder by mapping of the oral motor abilities of children with ASD in the initial and final stages of the examination through the section 'Warm-up' from the software programme FONO 2 and through the created evaluation numerical scale. Then we compared the difference in evaluating the initial state of oral motor activity in children with ASD with its final state. The study introduce partial solutions of the specific research project IGA (IGA 2014/2015 Pdf 2014\_016), which was implemented by the Institute of Special Education Studies of the Faculty of Education Palacký University in Olomouc (principal researchers: Kateřina Vitásková, Alena Říhová).

Content. The initial section of the contribution is dedicated to the theoretical solutions relating to the given issue and, concurrently, provides information on the already implemented research focused on the given issue. The relations to dyspraxia problems, the development of speech, and early vocalisation especially, and complex motor difficulties were mentioned. The methodological domain of the contribution was the analysis of oral motor ability in children with ASD through the application of the partial task activity 'Warm-up' from the software programme FONO 2. The speech and language therapy programme FONO 2 is a multimedia programme intended for individuals with impaired communication ability and formed of 5 basic partial domains — warm-up, association, phonetic hearing, reading, and copying dactyl characters. For research purposes, we selected the section 'Warm-up' comprising 37 activities. For analysis purposes, we selected 13 tasks. The principal research method was longitudinal observation that was implemented from March to June 2014. It concerned extrospective participant observation based on the set monitored domains and the designed evaluation items accompanied by graphical visualisation of the given software, which were regularly recorded and compared in each client within the given time interval.

Conclusions. Preliminary, based on our research data, we can state, that it is possible to achieve positive results through systematic speech and language therapy intervention focused on the development of mobility in the oral-facial sphere in children with ASD. The analysis of motor activities in the oral-facial sphere in the first client showed that with regard to the initial evaluation, positive changes were recorded in 4.11 % of the activities. However, these differences related to one evaluation scale only and an increase by only two numerical scales was recorded in 4 activities. Thus, it is obvious that in Valentýna, these domains underwent significant changes, which must be considered as highly positive with regard to the relatively short time interval. A lower frequency-based position, even with regard to the first client and, concurrently, the next child with ASD, is held by stagnation of the evaluated spheres, corresponding to 28.21 %. Nevertheless, we have to emphasize that the research was limited and influenced by factors capable of determining its course. They concerned, in particular, the child's current physical and psychological states or external environment effects, including noise from the surrounding environment or too high or low temperature of the given environment. Moreover, with regard to the gravity of the diagnosis and the significant deficits affecting, among other things, communication ability, the period of the research (4 months) cannot be considered as long enough to record more significant results and, in particular, speak about possible stability of the positive results.