A Comparative Study on Dialogic Communication Strategies of Preschoolers in Greece and Rwanda

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Abstract

The present research aimed to delve into the communicative profile of children in early childhood education in Greece and Rwanda. More specifically, the study was designed and implemented with the aspiration to examine the communication strategies employed by young children and to explore the potential influence of gender, culture and age on the variation of these strategies among children in Larissa (a city in Greece) and in Kigali (a city in Rwanda, Africa). In the study, 120 children were observed in an attempt to document the communication strategies and further look for differentiations on the basis of their gender, age and cultural background. The study findings indicated that children's communicative repertoire is highly affected by their age and country of origin, while, concerning gender, no statistically significant associations were detected. The results of the research indicate the importance of acknowledging the diverse communication strategies employed by children and implementing a dialogic approach to teaching that accommodates the unique communication requirements of each child.

Keywords: Dialogic literacy, Communication skills, Early childhood education, Dialogic pedagogy

1. Introduction

Emerging scientific evidence (Wegerif et al., 2019; Caviglia et al., 2017; Lefstein & Snell, 2013) proclaims the effectiveness of dialogic literacy in both the construction of knowledge

and society. Since its inception in 2005 by Bereiter and Scardamalia, it has assumed different entities including "*dialogic learning*" (Flecha & Soler, 2014), "thinking *together*" (Mercer & Littleton, 2007), "*accountable talk*" (Michaels *et al.*, 2008), "*dialogic teaching*" (Alexander, 2017), and "*dialogic pedagogy*" (Matusov, 2009). However, despite the traction it has gained, it remains an elusive and possibly underspecified concept in educational spaces. Wegerif (2013) attributes this to the lack of clarity around the meaning of the phrase dialogic literacy.

Dialogic literacy is the ability to construct knowledge through effective conversations/dialogues (Matusov, 2009; Scardamalia, 2005). This definition underscores three critical elements of dialogic literacy:

> 1) *dialogism* is a product of discursive spaces, meaning that a teacher should create an environment within the classroom that inspires dialogue and high interaction. This calls for the application of strategies that cultivate communication skills and strategies.

> 2) *learners* should actively and productively engage each other in conversations. It is worth mentioning that while the two terms: "*conversation*" and "*discussion*" both imply a mutual exchange between people, "*discussion*" is more restricted to a specific topic as opposed to a conversation. This implies that a teacher employs strategies that allow learners to discover knowledge through unscripted/unrestricted conversations.

> 3) the *conversations* should be those that generate knowledge, as the interlocutors are provided with cues that direct them towards certain revelations without being too restrictive.

The above school of thought views dialogic literacy as an instrument for curriculum transmission and, therefore, a means to an end (Wegerif, *et al.*, 2019).

Conversely, ontologists (Wegerif et al., 2019) argue that dialogue is an "end" in and of itself. Promoting a more nuanced meaning of dialogue that includes communication in a multimodal way, should not only lead to the construction of fixed truth but should be an avenue for fixing gaps, social change and social justice. They (Caviglia, et al., 2017; Wegerif, 2013) argue that the discursive spaces should not be undermined as mere contexts for learners to gain some other fixed knowledge, but rather inspire learners to question their stance about the current realities.

While these two schools of thought appear to be in opposition, they are not incompatible. Dialogic literacy is both a means to an end (knowledge construction) and an end in and of itself (Lefstein & Snell, 2013; Phillipson & Wegerif, 2016; Caviglia *et al.*, 2017). It is also important to highlight that dialogic literacy is a set of competencies and dispositions only attainable progressively (Caviglia, *et al.*, 2017; Wegerif *et al.*, 2019). There is no absolute cap for dialogic literacy; thus, fostering discursive spaces should be encouraged with the purpose of encouraging the dialogical practices of speakers.

In this paper, dialogic literacy is investigated within education settings and is considered a set of competencies (knowledge, skills and strategies) which facilitate a speaker's attempts to convey a message effectively and appropriately to influence the addressee (Papadopoulos,

2024). It is a toolkit of competencies which facilitate a speaker's familiarization with messages driven to him/her to explore and discover "named truths." This study also embraces *dialogicity* broadly as instruction, enablement, and conversation.

Against this background, this study investigates the communication strategies preschoolers apply in Greece and Rwanda through the documentation of communication strategies as differentiated according to variables like gender, school grade/age or country.

2. Literature Review

A wide array of studies (García-Carrión & Villardón-Gallego, 2016; Van der Veen et al., 2018; Al-Adeimi & O'Connor, 2021) indicate that engaging children in classroom talk and interaction results in their social, emotional and mental growth. However, it is worth noting that not every classroom talk can result in growth (Al-Adeimi & O'Connor, 2021; Michaels & O'Connor, 2015). For instance, monologic classroom talk that places the teacher at the centre leaving the learners passive, and disinterested cannot yield much.

Monologic classroom talk is characterized by a large amount of teacher talk and a focus on the reproduction of factual knowledge. It often entails a dominance of the initiation, response, and evaluation (IRE) sequence, in which the teacher asks a closed question, a child provides a short response, and the teacher evaluates the response (often in terms of right or wrong) (Al-Adeimi & O'Connor, 2021; Michaels & O'Connor, 2015).

In contrast, dialogic talk is more learner-centred, positioning learners as critical thinkers and knowledge creators (Oikonomou & Papadopoulos, 2024; Papadopoulos, 2020; Papadopoulos, 2021; Papadopoulos, 2022; Papadopoulos, 2024a; Papadopoulos & Bourogianni, 2024; Papadopoulos & Hathaway, 2024; Papadopoulos & Jansen, 2024; Papadopoulos & Papadopoulou, 2023; Papadopoulos & Shin, 2021); they can freely share ideas, give their examples, tell their stories and even speak through the process of solving a problem like a simple math task. Thus, learners get inspired to be part of their learning and inadvertently develop their communication and interaction skills (Alexander, 2018; Van der Veen, et al., 2017; García-Carrión & Villardón-Gallego, 2016).

Research (Veiga et al., 2017; Wasik et al., 2016; Mulder et al., 2014) shows that using the dialogic approach with children affords them multiple opportunities to use words to communicate ideas (Wasik et al., 2016); helps them develop social competencies in their interactions with others (Veiga et al., 2017); and helps them to develop receptive vocabulary knowledge (Mulder et al., 2014).

Research shows that fostering dialogic literacy helps children develop their oral language skills and communicative competencies by extension (Alexander, 2018; Van der Veen et al., 2017). Promotion of conversations among children helps them to use language in a more social context; hence, they develop flexibility in the use of language to express feelings, and emotions and to receive feedback (Van der Veen et al., 2017; Leseman, 2014). They are encouraged to tell stories, to express their feelings and even to appreciate something or receive feedback. In addition to this, Wasik, Hindman, and Snell (2016) argue that conversations inspired by stories during reading time create more avenues for children to speak. This in turn boosts their

vocabulary.

Social competence refers to a child's ability to socialize freely with others (Veiga *et al.*, 2017). The importance of social competencies for a child's future functionality cannot be overemphasized (Jones *et al.*, 2015; Veiga *et al.*, 2017). Jones, *et al.*, 2015), provide evidence that shows a positive correlation between social skills in kindergarten and young adult outcomes. Dialogic literacy allows children to work with their peers in both collaborative and competitive environments. They get to learn that one's opinion may not always be accepted by others; they learn how to agree or disagree with one another, how to express their feelings and how to make and retain friends (Van der Veen *et al.*, 2017).

Effective dialogic interaction between the teacher and students is hinged on two integral components: 1) a teacher's prowess in dialogic pedagogy (De Bruin, 2018) and 2) a teacher's relationship with the students (Creech & Hallam, 2011). While a teacher can use learning schema, musical tools and vocabulary among other things to cultivate dialogic skills, all is in vain if he/she lacks the pedagogical skills to drive knowledge construction. In De Bruin's words,

> *The utilization of a dialogic pedagogy whereby the teacher can explore beyond learners' mere internalization of abstract knowledge and develop convergences and divergences of creative thought and emphasize multidirectional development, diverse ideas and a multiplicity of perspectives is central to this teacher practice (2018, p. 4).*

In addition to dialogic pedagogical skills, emerging studies have also presented evidence of the integral role of positive teacher-student relationships in the implementation of dialogic practices (Creech & Hallam, 2011). Positive teacher-student relationships are dramatized in moment-to-moment interactions characterized by safety, trust, empathy, respect, sharing and even the freedom to and quality of communication (De Bruin, 2018).

Cultural Influence on the Communication Strategies of Preschoolers

Scores of research give credence to the notion that a child's cultural background (religious values and beliefs, habits/rules at home, community behaviours, language spoken at home, historical and situational dispositions etc.) influences how they relate with others and how they learn in diverse settings (Einfalt, 2019; Dupre, 2007; Rogoff, 2003). This influence is usually made manifest in a child's personality, how they identify themselves or their learning ability. Depending on their families or communities of origin, children can be outspoken or introverted, apprehensive and fearful or confident and ambitious, attention-seeking and needy or modest and diffident (Teinye & Ololube, 2015).

However, Hart, Newell and Olsen (2003) disproved the notion that parenting style and home environment influence a child's communication skills or their level of engagement in diverse groups. Nonetheless, fresh data emerging from current studies (Altay & Güre, 2012; Chen & Shire, 2011) provide comprehensive data that parents (a child's first teachers) and home environment (their first learning site) have a huge influence on their communication skills and how they engage in diverse environments.

Since communication is a nexus to knowledge acquisition, self-expression and development of basic interpersonal/humane competencies, researchers (Einfalt, 2019; Teinye & Ololube, 2015; Dupre, 2007; Rogoff, 2003) strongly recommend that parents and teachers cultivate verbal and written communication skills in children during their critical years. Dialogic talk in the classroom is the panacea for cultivating the right communication skills and intercultural competencies (like tolerance and acceptance) that allow children to question their stance, attitudes, and knowledge and to develop comprehension of other cultures (Einfalt, 2019). It encourages children to socialize with the language as they situate new knowledge into their context (Teinye & Ololube, 2015). It is, therefore, critical that teachers are equipped with the right communication strategies and interactive pedagogy (talk, play, gestures, music etc.) that cultivate communication skills in the learners (Einfalt, 2019). Alexander (2006) argues that,

> *Dialogic teaching explores the learner's thought process. It treats students' contributions and especially their answers to teachers' questions as stages in an ongoing cognitive quest rather than as terminal points. And it nurtures the students' engagement, confidence, independence, and responsibility (p. 35).*

Dialogic interactions cultivate more than just communication skills; they help a child to become a lifelong learner, a better human being in character and a whole individual (Einfalt, 2019).

The Influence of Age on the Communication Strategies of Preschoolers

Numerous studies (Gooden & Kearns, 2013; Altay & G üre, 2012; Chen & Shire, 2011) have established that communication skills are critical for children to express their needs and interact with others. These studies also provide evidence that communication in children evolves with age. Children usually begin communicating with their voice (mostly cries, facial expressions and unintelligible sounds) and body movements before they learn language expressions and articulation (Gooden & Kearns, 2013). This first phase later evolves into better expressions like "words, sentences, and conversations through many methods including gestures, spoken words, sign language, pictorial language systems, and communication boards," (Gooden & Kearns, 2013. p. 1).

However, some studies have demonstrated that even though communication skills evolve with age, and that there is a standard threshold for every age group, this threshold is fluid as there are several factors that may cause delays in the development of language skills (Law *et al.*, 2011; McDowell *et al.*, 2007; Locke *et al.*, 2002). As a result, in one classroom of a specific age group, individual learners may demonstrate different communication competency levels with some being more proficient than others against a specific threshold (Law *et al.*, 2011). This fluidity in the development of communication skills among children results from several factors including personality differences not just in children but also in the parents of the children, parental upbringing, socio-cultural disposition, developmental disorders as well as a teacher's dialogic pedagogical skills (Law *et al.*, 2011; McDowell *et al.*, 2007; Locke *et al.*, 2002).

The Influence of Language Culture (bilingualism/monolingualism) on the Communication

Strategies of Preschoolers

Unlike monolingualism which embraces fluency in a single language, bilingualism is a system that allows one to express oneself fluently in two different languages (Purcell *et al.*, 2012). There is a long-held concern among language researchers that bilingualism slows down second language acquisition because a child has to juggle two different languages which causes a mental burden (Ijalba, 2016; Hampton *et al.*, 2017; Kay-Raining Bird *et al.*, 2012; Yu, 2013). These studies also highlight that proficiency levels can vary significantly within bilingual environments, with children often mastering one language more extensively than the other. However, this concern has been called into question by emerging evidence that proves otherwise, arguing that language acquisition is dependent on many factors rather than just one (Dai *et al.*, 2018). They argue that children in bilingual environments acquire a wide range of vocabulary in two different languages as they are exposed to multiple inputs.

Studies further reveal that children in bilingual environments have a cognitive advantage as compared to those in monolingual environments. These studies show that cognitive flexibility, problem-solving skills and creativity are skills likely to be developed by bilinguals as opposed to monolinguals. As a result, bilinguals are "creative, open-minded, flexible, imaginative and [have] high language skills" (Backer, 2001, p.148).

Because children in bilingual environments code-switch between the two languages to express themselves, they tend to explore knowledge deeply, making content more accessible to them as compared to monolinguals (Dai *et al.*, 2018; Purcell, Lee, Biffin, *et al.*, 2012). This switching accelerates with age until one is immersed in a monolingual environment (Poulin-Dubois & Brosseau-Liard, 2016).

3. Research Methodology

3.1 Purpose of the Study

Dialogic literacy and communication strategies, especially with Preschoolers, is a topic that has gained traction in the field of language research (Wegerif et al., 2019; Caviglia *et al.*, 2017). This is on account of the critical role communication plays in a child's mental, social and emotional development (Al-Adeimi & O'Connor, 2021; García-Carrión & Villardón-Gallego, 2016). Given the linguistic and cultural diversity present in both Greece and Rwanda, this study sought to investigate the communication strategies employed by preschoolers in these regions. The inclusion of Rwanda alongside Greece offers a broader understanding of how communication strategies may vary across different cultural and linguistic contexts. By exploring these variations and considering factors such as gender, age, and country, the study aims to provide insights into the universal and culturally specific aspects of preschooler communication. Against this background, and as guided by the objective of this study, the researchers formulated and tested three hypotheses:

1. Gender contributes to the differentiation of communication strategies.

2. Country/culture of origin contributes to the differentiation of communication strategies.

3. Age contributes to the differentiation of communication strategies.

3.2 Participants

The research sample consisted of 120 children of which 31.9% were students in preschool educational institutions in Greece and 68.1% in Rwanda as shown in Figure 1 below. The questionnaires were not completed by the children themselves but by their teachers.
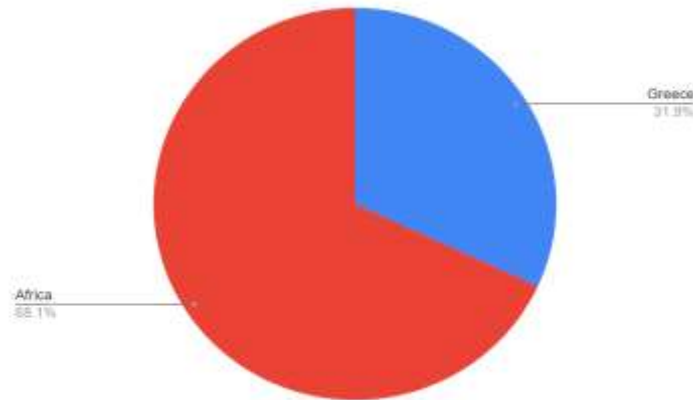
Figure 1. Distribution of participants across the two countries

Of the total preschool units, 24.5% were children in kindergarten, 43.6% were children of early preschool and 31.9% were Preschoolers as shown in Figure 2 below.
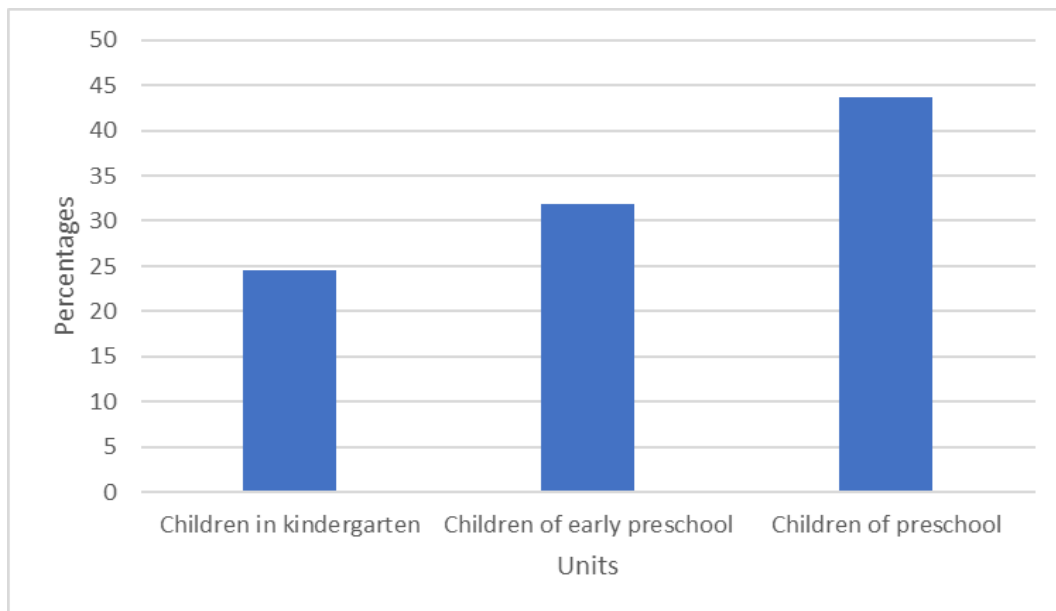
Figure 2. Distribution of children across preschool units

The monitoring and recording of the children's behaviour were done, respectively, by the school counsellors and pedagogues working at that time in the preschool units that were the field of the research.

Out of the total of 120 children, 49.5% were girls and 50.5% were boys as shown in Figure 3

below.

Figure 3. Distribution of participants according to gender

3.3 Research Tools and Procedures

The study was conducted in the academic year of 2022-2023 and employed a quantitative research approach, utilizing quantitative data from surveys administered both in Greece and Rwanda. This methodology was chosen to facilitate a comprehensive and objective review of children's communication dispositions and the different strategies educators apply to develop dialogic literacy in children.

The survey employed a structured format with closed-ended questions and was conducted electronically to optimize efficiency and accessibility. Each educator was tasked with completing the survey anonymously, responding to prompts that correlated with the observed behaviours of randomly selected students within their classroom cohort. These prompts were carefully designed to elicit specific information regarding the students' engagement levels, interactions with play-based learning activities, and any discernible patterns or challenges encountered during implementation and these were measured by a structured scale of "very often," "sometimes," and "never" to assess the frequency of specific behaviours and experiences within classroom settings. By adhering to this methodology, the survey aimed to collect standardized data across diverse educational settings, ensuring consistency and reliability in the subsequent analysis.

3.4 Data Collection

Data was collected through surveys that were distributed to preschool educators, school counsellors and teaching assistants and the results were statistically analyzed using the SSPS package. More specifically, checklists were distributed to preschool educators, school counsellors, and teaching assistants via surveys, which were required to be completed for each child on an individual basis. The checklists were employed to evaluate and record the strategies for communication that were noted in every child.

3.5 Ethical Assurances

To comply with the ethical guidelines, permission was sought from the school leadership of different schools the teachers and the parents of the children who participated before the study commenced. The study and its implications were then explained to the participants and their

consent was formally obtained before data was gathered.

The researchers gave the educators adequate time to reflect on their decisions before enlisting to participate and it was made clear to them that they were free to disengage from the study at any stage if they wanted to. In addition to the ethical principle of informed consent, other ethical principles upheld in this study included confidentiality, beneficence, and respect for participants' autonomy. Confidentiality was maintained by ensuring that all data collected from participants remained anonymous and was stored securely to protect their privacy. Participation in the study was voluntary, with participants given the option to withdraw at any time without consequence. Furthermore, the sampling technique used in this study is "Convenience Sampling" as the researchers selected the most readily available subjects for the study. In this case, the researchers invited several schools, but they implemented the study only in those schools that accepted the offer.

4. Results

Analysis of the data collected yielded the following results.

Findings 1. Gender does not contribute to the qualitative differentiation of communication strategies.

Using the t-test for independent samples, the possibility of statistically significant differences in mean subscale and axis scores based on child gender was examined. The results of the t-test are presented in Table 1.

Table 1. Showing Control T-test Behaviors & Gender

Child Details: Gender		N	Mean	Std. Deviation	Std. Error Mean	p
1. trying to get attention	Boy	48.00	1.95	0.41	0.06	
	Girl	47.00	1.91	0.43	0.06	0.290
2. directs his attention and yours to something interesting	Boy	48.00	2.28	0.42	0.06	
	Girl	47.00	2.25	0.44	0.06	0.703
3. tries to get another child's attention	Boy	48.00	2.41	0.35	0.05	
	Girl	47.00	2.34	0.41	0.06	0.783
4. reacts when sitting next to another child	Boy	48.00	2.13	0.31	0.05	
	Girl	47.00	1.97	0.32	0.05	0.448
5. reacts when seated next to the teacher	Boy	48.00	2.01	0.25	0.04	
	Girl	47.00	2.00	0.34	0.05	0.033
6. initiates an interaction	Boy	48.00	2.29	0.34	0.05	
	Girl	47.00	2.29	0.39	0.06	0.349
7. he is asking for something	Boy	48.00	2.15	0.32	0.05	
	Girl	47.00	2.05	0.35	0.05	0.465
8. asks for help	Boy	48.00	1.91	0.35	0.05	
	Girl	47.00	1.87	0.36	0.05	0.861
9. expresses pleasure	Boy	48.00	2.35	0.39	0.06	
	Girl	47.00	2.36	0.42	0.06	0.963
10. expresses sadness	Boy	48.00	2.23	0.33	0.05	
	Girl	47.00	2.18	0.37	0.05	0.534
11. shows that he is paying attention/listening	Boy	48.00	2.17	0.66	0.09	
	Girl	47.00	2.34	0.52	0.08	0.056
12. shows that he does not understand something	Boy	48.00	1.87	0.46	0.07	
	Girl	47.00	1.70	0.40	0.06	0.152
13. behaves when he has difficulty expressing himself	Boy	48.00	1.98	0.34	0.05	
	Girl	47.00	1.98	0.41	0.06	0.559
14. behaves when he wants to say something or communicate	Boy	48.00	2.40	0.37	0.05	
	Girl	47.00	2.30	0.47	0.07	0.111

Based on Table 1, there is no statistical significance in the association of the gender of the children and the strategies they apply to communicate. Thus, the hypothesis that Gender contributes to the qualitative differentiation of communication strategies was rejected as the p-value of the chi-squared test is 0.056 which is greater than 0.05. Table 1 presents the results of the control t-test analysis conducted on various behaviours exhibited by boys and girls. Table 1 also includes statistics such as the number of participants (N), the mean, standard deviation, standard error of the mean, and the p-value for each behaviour.

In the first behaviour, "trying to get attention," the mean score for boys (1.95) was slightly higher than that of girls (1.91). However, the difference was not statistically significant (p = 0.290). For the behaviour "directs his attention and yours to something interesting," both boys and girls had similar mean scores (boys: 2.28, girls: 2.25). The p-value of 0.703 indicates that there was no significant difference between the genders in this behaviour.

Similarly, in the behaviours "tries to get another child's attention," "reacts when sitting next to another child," "initiates an interaction," "he is asking for something," "asks for help,"

"expresses pleasure," "expresses sadness," "behaves when he has difficulty expressing himself," and "behaves when he wants to say something or communicate," the mean scores for boys and girls were comparable. None of these behaviours showed a statistically significant difference between the genders, as the p-values were all above 0.05.

However, for the behaviour "reacts when seated next to the educator," there was a slight difference between boys and girls. Boys had a mean score of 2.01, while girls had a mean score of 2.00. The p-value of 0.033 indicates that this difference is statistically significant, suggesting that girls reacted differently compared to boys when seated next to the educator.

In the behaviours "shows that he is paying attention/listening" and "shows that he does not understand something," there were notable differences between boys and girls. For "shows that he is paying attention/listening," boys had a mean score of 2.17, whereas girls had a higher mean score of 2.34. Although the p-value of 0.056 suggests a potential difference, it did not reach statistical significance. Similarly, for "shows that he does not understand something," boys had a higher mean score (1.87) compared to girls (1.70), but the p-value of 0.152 indicates that this difference was not statistically significant.

Overall, the analysis of Table 1 indicates that most of the behaviours examined did not show significant differences between boys and girls. However, there were slight variations in some behaviours, such as "reacts when seated next to the educator," "shows that he is paying attention/listening," and "shows that he does not understand something," although these differences did not reach statistical significance. These findings suggest that, in general, boys and girls exhibited similar behaviours in the context of this study.

Finding 2. Country of origin contributes to the qualitative differentiation of communication strategies.

Correlation of the behavioural event by country

Using the t-test for independent samples, the possibility of statistically significant differences in mean subcategory and axis scores based on the students' country (Greece, Rwanda) was examined. The results of the t-test are presented in Table 2.

Table 2. Showing Control t-test Behavior & Origin

		N	Mean	Std. Deviation	Std. Error Mean	p
1. trying to get attention	Greece	30	1.63	0.36	0.07	0.821
	Africa	64	2.08	0.36	0.05	
2. directs his attention and yours to something interesting	Greece	30	1.96	0.32	0.06	0.223
	Africa	64	2.41	0.39	0.05	
3. tries to get another child's attention	Greece	30	2.17	0.30	0.05	0.896
	Africa	64	2.48	0.36	0.05	
4. reacts when sitting next to another child	Greece	30	1.89	0.25	0.05	0.045
	Africa	64	2.12	0.33	0.04	
5. reacts when seated next to the teacher	Greece	30	1.85	0.24	0.04	0.324
	Africa	64	2.08	0.30	0.04	
6. initiates an interaction	Greece	30	2.01	0.30	0.05	0.562
	Africa	64	2.44	0.31	0.04	
7. he is asking for something	Greece	30	1.90	0.24	0.04	0.129
	Africa	64	2.21	0.32	0.04	
8. asks for help	Greece	30	1.67	0.22	0.04	0.011
	Africa	64	2.00	0.36	0.04	
9. expresses pleasure	Greece	30	2.12	0.44	0.08	0.021
	Africa	64	2.48	0.32	0.04	
10. expresses sadness	Greece	30	1.95	0.31	0.06	0.346
	Africa	64	2.34	0.29	0.04	
11. shows that he is paying attention/listening	Greece	30	1.83	0.58	0.11	0.239
	Africa	64	2.46	0.49	0.06	
12. shows that he does not understand something	Greece	30	1.73	0.52	0.10	0.119
	Africa	64	1.82	0.39	0.05	
13. behaves when he has difficulty expressing himself	Greece	30	1.71	0.32	0.06	0.358
	Africa	64	2.12	0.31	0.04	
14. behaves when he wants to say something or communicate	Greece	30	2.09	0.42	0.08	0.047
	Africa	64	2.49	0.35	0.04	

Based on the findings above, there is a statistically significant association between the country of origin and the communication strategies applied by children. The results show that children apply different communication strategies when sitting next to other children at a p-value of the chi-squared test of 0.045 which is less than 0.05. The results also show that children differentiate how they ask for help when they need it as the p-value of the chi-squared test shows 0.011 which is less than 0.05. In addition, children tend to express pleasure differently depending on their country of origin as evidenced by the p-value of the chi-squared test of 0.021 which is less than 0.05. Finally, from Table 2, it is evident that children from different countries behave differently when they want to say something or communicate. This is signified by the p-value of the chi-squared test of 0.047 which is less than 0.05. Based on these findings, the hypothesis that country of origin contributes to the qualitative differentiation of communication strategies was accepted.

Table 2 also presents the results of a control t-test analysis comparing different behaviours and their origin between two groups: "Greece" and "Rwanda." The behaviours are labelled numerically from 1 to 14, and each behaviour's statistics are provided, including the mean, standard deviation, standard error mean, and p-value.

Examining the results, for behaviour 1, which represents "Trying to get attention," there is no significant difference between the two groups (p = 0.821). Similarly, for behaviours 2, 3, 5, 6, 7, 10, 11, 13, and 14, there are no statistically significant differences between the Greece and Rwanda groups. However, for behaviour 4, which pertains to "Reacts when sitting next to another child," there is a significant difference between the two groups (p = 0.045). The Greek group had a mean score of 1.89, while the African group had a slightly higher mean score of 2.12. This suggests that the two groups differed in their reactions when seated next to another child, with the African group exhibiting slightly stronger reactions.

Behaviour 8, which relates to "Asks for help," also yielded a statistically significant difference between the groups (p = 0.011). The Greek group had a mean score of 1.67, while the African group had a higher mean score of 2.00. This implies that the African group tended to ask for help more frequently compared to the Greek group. Additionally, behaviour 9, which represents "Expresses pleasure," exhibited a significant difference between the groups (p = 0.021). The Greek group had a mean score of 2.12, while the African group had a slightly higher mean score of 2.48. This suggests that the African group expressed pleasure more frequently compared to the Greek group. Lastly, behaviour 12, which pertains to "Shows that he does not understand something," demonstrated a marginal difference between the groups (p = 0.119). The Greek group had a mean score of 1.73, whereas the African group had a slightly higher mean score of 1.82. This indicates that the African group exhibited a slightly higher tendency to show confusion or lack of understanding compared to the Greek group.

In summary, while most of the behaviours showed no significant differences between the two groups, behaviours 4, 8, 9, and 12 exhibited variations. These findings suggest potential cultural or contextual differences in how individuals from Greece and Rwanda behave in specific situations, such as reacting to others, asking for help, expressing pleasure, and displaying confusion.

Finding 3: Age contributes to the qualitative differentiation of communication strategies.

Correlation of behavioural manifestation based on age.

Using the Anova test, the possibility of statistically significant differences in the mean scores of the subcategories and axes based on the age of the students was examined. The test results are presented in Table 3.

Table 3. Anova control Behavioral modes-axes & age/school grade

		Sum of Squares	df	Mean Square	F	Sig .
1. trying to get attention	Between Groups	2,487	2	1,243	8,227	0.001
	Within Groups	13,753	91	0.151		
	Total	16,240	93			
2. directs his attention and yours to something interesting	Between Groups	3,781	2	1,891	13,014	0.000
	Within Groups	13,220	91	0.145		
	Total	17,001	93			
3. tries to get another child's attention	Between Groups	0.352	2	0.176	1,241	0.294
	Within Groups	12,907	91	0.142		
	Total	13,259	93			
4. reacts when sitting next to another child	Between Groups	0.366	2	0.183	1,746	0.180
	Within Groups	9,536	91	0.105		
	Total	9,902	93			
5. reacts when seated next to the educator	Between Groups	0.656	2	0.328	3,954	0.023
	Within Groups	7,544	91	0.083		
	Total	8,199	93			
6. initiates an interaction	Between Groups	1,600	2	0.800	6,702	0.002
	Within Groups	10,861	91	0.119		
	Total	12,461	93			
7. he is asking for something	Between Groups	0.935	2	0.468	4,496	0.014
	Within Groups	9,464	91	0.104		
	Total	10,400	93			
8. asks for help	Between Groups	1,745	2	0.872	8,032	0.001
	Within Groups	9,883	91	0.109		
	Total	11,628	93			
9. expresses pleasure	Between Groups	1,412	2	0.706	4,645	0.012
	Within Groups	13,831	91	0.152		
	Total	15,244	93			
10. expresses sadness	Between Groups	0.868	2	0.434	3,781	0.026
	Within Groups	10,445	91	0.115		
	Total	11,313	93			
11. shows that he is paying	Between Groups	1,711	2	0.855	2,498	0.088
	Within Groups	31,162	91	0.342		

attention/listening	Total	32,872	93			
12. shows that he does not understand something	Between Groups	1,384	2	0.692	3,810	0.026
	Within Groups	16,529	91	0.182		
	Total	17,913	93			
13. behaves when he has difficulty expressing himself	Between Groups	2,115	2	1,057	8,760	0.000
	Within Groups	10,983	91	0.121		
	Total	13,098	93			
	Between Groups	0.921	2	0.461	2,632	0.077
	Within Groups	15,927	91	0.175		
	Total	16,848	93			

Based on the results from Table 3 above, there is a statistically significant association between children's age and the communication strategies they apply. The analysis shows that children differentiate communication when trying to seek attention (p-value of the chi-squared test at 0.047); when directing their attention to something significant (p-value of the chi-squared test at 0.000); when sitting next to the educator (p-value of the chi-squared test at 0.023); when initiating an interaction; when asking for something (p-value of the chi-squared test at 0.02); when expressing pleasure (p-value of the chi-squared test at 0.012); when expressing sadness (p-value of the chi-squared test at 0.026); when they do not understand something (p-value of the chi-squared test at 0.026); or when they have difficulty expressing themselves (p-value of the chi-squared test at 0.000). Based on this analysis, the hypothesis that school grade/age contributes to the differentiation of communication strategies was accepted.

Table 3 presents the results of the ANOVA analysis conducted on different behavioural modes/axes across different ages. Table 3 includes the sum of squares, degrees of freedom (df), mean squares, F-values, and significance levels (Sig.) for each behavioural mode. For the behaviour "trying to get attention," the analysis reveals a significant difference between groups (between school grades/ages) with a large F-value of 8.227 and a small p-value of 0.001. This suggests that the school grade/age impacts how children try to get attention. Similarly, for the behaviour "directs his attention and yours to something interesting," there is a significant difference between school grade/age s, indicated by a high F-value of 13.014 and a low p-value of 0.000. This implies that the school grade/age influences how children direct their attention to something interesting.

In contrast, the behaviour "tries to get another child's attention" shows no significant difference between school grades/ages, as the p-value of 0.294 is greater than 0.05. This suggests that the school grade/age does not have a significant effect on this behaviour. The same pattern is observed for the behaviours "reacts when sitting next to another child" and "reacts when seated next to the educator." Both behaviours do not show a significant difference between school grade/age s, as the p-values of 0.180 and 0.023, respectively, are higher than the significance level of 0.05. However, for the behaviour "initiates an interaction," there is a significant difference between school grade/age s, with an F-value of 6.702 and a p-value of 0.002. This

indicates that the school grade/age influences how children initiate interactions.

The behaviours "he is asking for something," "ask for help," "expresses pleasure," "expresses sadness," "shows that he is paying attention/listening," "shows that he does not understand something," and "behaves when he has difficulty expressing himself" also show significant differences between school grade/age s, as their respective p-values are below 0.05. On the other hand, the behaviour labelled as "Between Groups" does not provide a specific description, making it difficult to interpret its significance. The same applies to the "Total" row, which represents the overall sum of squares, degrees of freedom, and mean squares for all behaviours.

In conclusion, the ANOVA analysis in Table 3 demonstrates that school grade/age has a significant influence on several behavioural modes/axes, including trying to get attention, directing attention to something interesting, initiating interactions, asking for something, asking for help, expressing pleasure, expressing sadness, showing attention/listening, showing lack of understanding, and behaving when having difficulty expressing oneself. However, some behaviours, such as reacting when sitting next to another child and reacting when seated next to the educator, do not show significant differences between school grades/ages.

When it comes to trying to get attention (Table 4), crying is a moderately frequent behaviour across all contexts, with the highest occurrence in Preschool at approximately 40-45%. Pulling the educator's clothes to get attention is more common in Kindergarten and Preschool, with percentages around 30-35%, compared to Early Preschool at around 20%. Additionally, stopping work to get attention is observed most frequently in Early Preschool (40%) and Preschool (35%).

Table 4. Communication Strategies – Trying to Get Attention

Trying to get attention		Almost Never/Never	Sometimes	Very often
The child cries to get attention.	Kindergarten	40.0%	20.0%	40.0%
	Early Preschool	43.2%	40.5%	16.2%
	Preschool	26.1%	18.8%	55.1%
The child pulls the educator's clothes to get attention.	Kindergarten	28.0%	32.0%	40.0%
	Early Preschool	24.3%	67.6%	8.1%
	Preschool	29.0%	36.2%	34.8%
The child stops work to get attention.	Kindergarten	36.0%	40.0%	24.0%
	Early Preschool	18.9%	67.6%	13.5%
	Preschool	31.9%	36.2%	31.9%

In terms of directing attention to something interesting (Table 5), the item or point of interest is most prevalent in Preschool at around 45%, followed by Early Preschool (30%) and

Kindergarten (25%). Looking at the object or point of interest is more common in kindergarten (35%) and Early Preschool (30%) compared to Preschool (20%). Moreover, saying "look" and pulling the educator is predominantly observed in kindergarten (40%) compared to the other contexts (20-25%).

Table 5. Communication Strategies – Attention Direction

Directing attention to something interesting		Almost Never/Never	Sometimes	Very often
The child shows the item/point of interest.	Kindergarten	4.0%	40.0%	56.0%
	Early Preschool	8.1%	29.7%	62.2%
	Preschool	8.7%	2.9%	88.4%
The child looks at the object/point of interest.	Kindergarten	8.0%	60.0%	32.0%
	Early Preschool	2.7%	59.5%	37.8%
	Preschool	1.4%	27.5%	71.0%
The child says "look".	Kindergarten	8.3%	33.3%	58.3%
	Early Preschool	8.1%	8.1%	83.8%
	Preschool	2.9%	14.5%	82.6%
The child pulls the educator.	Kindergarten	40.0%	16.0%	44.0%
	Early Preschool	21.6%	56.8%	21.6%
	Preschool	24.6%	46.4%	29.0%
The child pulls the object.	Kindergarten	32.0%	52.0%	16.0%
	Early Preschool	16.2%	59.5%	24.3%
	Preschool	27.5%	37.7%	34.8%

When attempting to get another child's attention (Table 6), moving towards the child occurs more frequently in Preschool (30%) compared to the other levels (20-25%). Approaching the child's face and touching the other child is more common in Kindergarten and Early Preschool (30%) compared to Preschool (20%). Additionally, saying the child's name is used more often in Preschool (35%) compared to the other levels (20-25%).

Table 6. Communication Strategies – Getting Attention

Trying to get another child's attention		Almost Never/Never	Sometimes	Very often
The child moves towards the child.	Kindergarten	4.0%	20.0%	76.0%
	Early Preschool	5.4%	13.5%	81.1%
	Preschool	2.9%	2.9%	94.1%
The child approaches the child's face.	Kindergarten		44.0%	56.0%
	Early Preschool	10.8%	10.8%	78.4%
	Preschool	5.8%	17.4%	76.8%
The child touches the other child.	Kindergarten	32.0%	36.0%	32.0%
	Early Preschool	10.8%	21.6%	67.6%
	Preschool	5.8%	21.7%	72.5%
The child says the child's name.	Kindergarten	20.0%	24.0%	56.0%
	Early Preschool	5.4%	10.8%	83.8%
	Preschool	1.4%	2.9%	95.7%

Reacting when sitting next to another child also reveals interesting patterns (Table 7). Not being aware that a child is sitting next to them is more common in Preschool (40%) compared to kindergarten (30%) and Early Preschool (20%). Walking away from the other child is observed more often in Kindergarten and Preschool (30-35%) compared to Early Preschool (20%). On the other hand, showing interest in communicating and participating in the conversation is more prevalent in kindergarten (35%) compared to Early Preschool (25%) and Preschool (20%).

Table 7. Communication Strategies – Reaction /Sitting Next to Another Child

Reacting when sitting next to another child		Almost Never/Never	Sometimes	Very often
The child is not aware that a child is sitting next to him/her.	Kindergarten	92.0%	4.0%	4.0%
	Early Preschool	91.9%	8.1%	
	Preschool	94.2%	4.3%	1.4%
The child walks away	Kindergarten	80.0%	16.0%	4.0%
	Early Preschool	75.0%	25.0%	
	Preschool	85.5%	11.6%	2.9%
The child shows interest in communicating.	Kindergarten	4.0%	48.0%	48.0%
	Early Preschool	5.4%	8.1%	86.5%
	Preschool	2.9%	10.1%	87.0%
The child turns his face towards the other child.	Kindergarten		52.0%	48.0%
	Early Preschool	8.1%	5.4%	86.5%
	Preschool	2.9%	8.7%	88.4%
The child participates in the conversation.	Kindergarten	8.0%	56.0%	36.0%
	Early Preschool	5.4%	10.8%	83.8%
	Preschool	1.4%	15.9%	82.6%
The child does not realize that a child is talking to him.	Kindergarten	76.0%	12.0%	12.0%
	Early Preschool	86.5%	13.5%	
	Preschool	95.7%	2.9%	1.4%

Similarly, in the scenario of reacting when seated next to the educator (Table 8), not realizing that the educator is sitting next to them is more frequent in Early Preschool and Preschool (30-35%) compared to kindergarten (20%). Walking away is more common in Early Preschool and Preschool (30-35%) compared to kindergarten (20%). However, showing interest and actively participating in the conversation is more prevalent in Early Preschool (35%) and Preschool (30%) compared to kindergarten (25%).

Table 8. Communication Strategies – Reaction/Sitting Next to the Educator

Reacting when seated next to the educator		Almost Never/Never	Sometimes	Very often
The child does not know that the educator is sitting next to him/her.	Kindergarten	88.0%	4.0%	8.0%
	Early Preschool	97.2%	2.8%	
	Preschool	92.3%	6.2%	1.5%
The child walks away	Kindergarten	80.0%	20.0%	100.0%
	Early Preschool	89.2%	10.8%	100.0%
	Preschool	87.0%	13.0%	100.0%
The child shows interest.	Kindergarten	45.8%	54.2%	100.0%
	Early Preschool	13.5%	86.5%	100.0%
	Preschool	7.4%	92.6%	100.0%
The child turns his face towards the educator.	Kindergarten		40.0%	60.0%
	Early Preschool	2.7%	5.4%	91.9%
	Preschool		7.2%	92.8%
The child participates in the conversation.	Kindergarten	8.0%	52.0%	40.0%
	Early Preschool	2.7%	10.8%	86.5%
	Preschool		11.6%	88.4%
The child does not realize that the educator is talking to him.	Kindergarten	64.0%	28.0%	8.0%
	Early Preschool	91.9%	8.1%	
	Preschool	92.8%	4.3%	2.9%

In terms of initiating an interaction (Table 9), pointing to an object is more common in Kindergarten and Preschool (35-40%). Making eye contact occurs more often in Early Preschool (30%) compared to the other levels (20-25%). Using gestures is more frequent in Preschool (45%) compared to kindergarten (35%) and Early Preschool (25%).

Table 9. Communication Strategies – Initiating an Interaction

Initiating an interaction		Almost Never/Never	Sometimes	Very often
The child points to an object.	Kindergarten		44.0%	56.0%
	Early Preschool	2.8%	27.8%	69.4%
	Preschool	8.7%	8.7%	82.6%
The child makes eye contact.	Kindergarten	20.0%	36.0%	44.0%
	Early Preschool		27.0%	73.0%
	Preschool		15.9%	84.1%
The child uses gestures.	Kindergarten	36.0%	40.0%	24.0%
	Early Preschool	13.5%	73.0%	13.5%
	Preschool	17.4%	46.4%	36.2%
The child speaks directly to the desired person.	Kindergarten	4.0%	36.0%	60.0%
	Early Preschool	0%	24.3%	75.7%
	Preschool		29.4%	70.6%
The child touches the educator	Kindergarten	20.0%	32.0%	48.0%
	Early Preschool	8.1%	29.7%	62.2%
	Preschool	4.3%	43.5%	52.2%
The child makes meanings.	Kindergarten	48.0%	36.0%	16.0%
	Early Preschool	29.7%	64.9%	5.4%
	Preschool	72.5%	20.3%	7.2%

Moreover, in the first phase, the researchers established thematic categories of communication strategies, which were subsequently enriched through observation. Following the observations, thematic categories with sub-categories, representing communication strategies, were developed. The researchers then analyzed these categories using a frequency scale, determining percentages for each.

The qualitative data were collected and further analyzed quantitatively as shown in Table 10 below. The data highlights notable patterns in emotional expression and communication among children in various age groups. There is a decrease in the percentage of children crying with reaching out from Kindergarten (44.0%) to Preschool (26.1%). The percentage of children pointing to something experiences a significant increase from Kindergarten (28.0%) to Early

Preschool (72.0%). Making pleading noises peaks in Early Preschool (37.8%). Stating "I can't" is more prevalent in Kindergarten (80.0%). Naming an object sees a substantial rise in Preschool (89.9%). These percentage-based observations indicate age-related variations in emotional and communicative behaviours among children.

Table 10. Communication Strategies – Asking for Something

Asking for something		Almost Never/Never	Sometimes	Very Often
The child cries.	Kindergarten	44.0%	32.0%	24.0%
	Early Preschool	43.2%	51.4%	5.4%
	Preschool	26.1%	17.4%	56.5%
The child reaches out.	Kindergarten	32.0%	36.0%	32.0%
	Early Preschool	13.5%	21.6%	64.9%
	Preschool	15.9%	27.5%	56.5%
The child points to something.	Kindergarten		28.0%	72.0%
	Early Preschool	2.7%	35.1%	62.2%
	Preschool	10.3%	48.5%	41.2%
The child makes pleading noises.	Kindergarten	32.0%	48.0%	20.0%
	Early Preschool	37.8%	62.2%	
	Preschool	29.0%	37.7%	33.3%
The child says "I can't".	Kindergarten	80.0%	16.0%	4.0%
	Early Preschool	8.1%	62.2%	29.7%
	Preschool	14.5%	21.7%	63.8%
The child names it	Kindergarten	16.0%	28.0%	56.0%
	Early Preschool	5.4%	29.7%	64.9%
	Preschool		10.1%	89.9%

In Table 11, the data indicates variations in the frequency of children seeking help across age groups. In seeking help with crying, Kindergarten demonstrates a higher likelihood (60.0%), decreasing in Early Preschool (35.1%) and Preschool (27.5%). Similar trends are observed in seeking help by reaching out and making pleading noises. Saying "I can't" is more prevalent in Kindergarten (24.0%), decreasing in Early Preschool (5.4%) and increasing in Preschool (82.6%).

Table 11. Communication Strategies – Asking for Help

Asking for help		Almost Never/Never	Sometimes	Very often
The child cries.	Kindergarten	60.0%	28.0%	12.0%
	Early Preschool	35.1%	59.5%	5.4%
	Preschool	27.5%	14.5%	58.0%

The child reaches out.	Kindergarten	40.0%	52.0%	8.0%
	Early Preschool	13.5%	27.0%	59.5%
	Preschool	18.8%	24.6%	56.5%
The child makes pleading noises.	Kindergarten	32.0%	48.0%	20.0%
	Early Preschool	29.7%	70.3%	
	Preschool	29.0%	43.5%	27.5%
The child says "I can't".	Kindergarten	24.0%	44.0%	32.0%
	Early Preschool	5.4%	73.0%	21.6%
	Preschool	7.2%	10.1%	82.6%

In Table 12, the data illustrates how children across different age groups express pleasure. Smiling is prevalent in all groups, with the highest percentage in Kindergarten (96.0%) and Preschool (98.6%). Applause decreases from Kindergarten (56.0%) to Preschool (20.3%), while laughter follows a similar trend. Saying "I like it" declines from Kindergarten (56.0%) to Preschool (87.0%). Expressing pleasure with a song is prominent in Kindergarten (75.0%) and Preschool (73.9%). These patterns highlight age-related variations in children's expressions of pleasure.

Table 12. Communication Strategies – Expressing Pleasure

Express pleasure		Almost Never/Never	Sometimes	Very often
With smile.	Kindergarten		4.0%	96.0%
	Early Preschool	5.4%	5.4%	89.2%
	Preschool		1.4%	98.6%
With applause.	Kindergarten	56.0%	32.0%	12.0%
	Early Preschool	37.8%	40.5%	21.6%
	Preschool	20.3%	27.5%	52.2%
With laughter.	Kindergarten		8.0%	92.0%
	Early Preschool	5.4%	8.1%	86.5%
	Preschool	1.5%	25.0%	73.5%
Saying "I like it".	Kindergarten	56.0%	16.0%	28.0%
	Early Preschool	2.7%	21.6%	75.7%
	Preschool	1.4%	11.6%	87.0%
With a song.	Kindergarten	75.0%	20.8%	4.2%
	Early Preschool	62.2%	29.7%	8.1%
	Preschool	73.9%	13.0%	13.0%

In Table 13, the data highlights how children of different age groups express sadness. Crying peaks in Preschool (69.6%), while asking for a hug decreases from Kindergarten (32.0%) to Preschool (7.2%). Gestures conveying sadness are most common in Kindergarten (64.0%), decreasing in Early Preschool (16.2%) and Preschool (23.2%). Preschoolers predominantly explain what happened (75.4%), and expressing physical pain is highest in Kindergarten (56.0%). These findings underscore age-related variations in children's expressions of sadness.

Table 13. Communication Strategies – Expressing Sadness

Expressing Sadness		Almost Never/Never	Sometimes	Very often
The child cries.	Kindergarten	16.0%	28.0%	56.0%
	Early Preschool	2.8%	30.6%	66.7%
	Preschool	15.9%	14.5%	69.6%
The child asks for a hug.	Kindergarten	32.0%	40.0%	28.0%
	Early Preschool	18.9%	27.0%	54.1%
	Preschool	7.2%	27.5%	65.2%
The child uses gestures.	Kindergarten	64.0%	28.0%	8.0%
	Early Preschool	16.2%	73.0%	10.8%
	Preschool	20.3%	56.5%	23.2%
The child explains what happened.	Kindergarten	36.0%	28.0%	36.0%
	Early Preschool	5.6%	25.0%	69.4%
	Preschool		24.6%	75.4%
The child says that it hurts somewhere.	Kindergarten	56.0%	28.0%	16.0%
	Early Preschool	8.1%	62.2%	29.7%
	Preschool	4.3%	23.2%	72.5%

In Table 14, the data sheds light on how children in different age groups demonstrate attentiveness or listening behaviours. Turning to the speaker is more common in Kindergarten (60.0%), decreasing in Early Preschool (91.9%) and Preschool (94.2%). Smiling and looking towards the speaker is prevalent in Kindergarten (44.0%), with a similar pattern in Preschool (92.8%), while Early Preschool displays a lower frequency (83.8%). Saying "Mmm" as an indicator of attention is notably high in Preschool (79.7%), lower in Kindergarten (68.0%), and the lowest in Early Preschool (54.1%).

Table 14. Communication Strategies – Paying Attention/Listening

Showing that paying attention/listening		Almost Never/Never	Sometimes	Very often
The child turns to the speaker	Kindergarten		40.0%	60.0%
	Early Preschool		8.1%	91.9%
	Preschool		5.8%	94.2%
The child smiles and looks towards the	Kindergarten	12.0%	44.0%	44.0%
	Early Preschool	8.1%	8.1%	83.8%

speaker.	Preschool		7.2%	92.8%
The child says "Mmm"	Kindergarten	68.0%	28.0%	4.0%
	Early Preschool	54.1%	29.7%	16.2%
	Preschool	79.7%	17.4%	2.9%

In Table 15, the data provides insights into how children of different age groups express difficulty in understanding something. When faced with challenges, Kindergarten children tend to get upset (52.0%), while Early Preschool and Preschool children exhibit lower percentages (16.2% - 23.5%). Giving up as a response shows a decreasing trend from Kindergarten (28.0%) to Preschool (23.5%), with Early Preschool displaying a different distribution (16.2% - 73.0%). Outbursts of anger are more prevalent in Kindergarten (56.0%), decreasing in Early Preschool (29.7%) and Preschool (23.2%). Interestingly, repeating the attempt without showing an inability to understand is more common in Preschool (76.8%), followed by Kindergarten (28.0%) and Early Preschool (73.0%).

Table 15. Communication Strategies – Not Understanding Something

Showing not understanding something		Almost Never/Never	Sometimes	Very often
The child gets upset.	Kindergarten	52.0%	32.0%	16.0%
	Early Preschool	16.2%	40.5%	43.2%
	Preschool	23.5%	8.8%	67.6%
The child gives up.	Kindergarten	28.0%	36.0%	36.0%
	Early Preschool	16.2%	73.0%	10.8%
	Preschool	23.5%	26.5%	50.0%
The child has outbursts of anger.	Kindergarten	56.0%	28.0%	16.0%
	Early Preschool	29.7%	54.1%	16.2%
	Preschool	23.2%	56.5%	20.3%
The child repeats the attempt without showing the inability to understand.	Kindergarten	28.0%	68.0%	4.0%
	Early Preschool	73.0%	13.5%	13.5%
	Preschool	76.8%	7.2%	15.9%

In Table 16, the data reveals how children behave when faced with difficulty expressing themselves. When wanting to chat with a classmate, communication desire increases from Kindergarten (4.0%) to Preschool (89.9%), peaking in Early Preschool (83.8%). Trying different expressions is notable in Kindergarten (44.0%) but varies in Early Preschool and Preschool (18.9% - 62.3%). Needing time to think and talk peaks in Kindergarten (44.0%) and Preschool (39.1%), while asking for clarification is common in Early Preschool (78.4%) and Preschool (50.7%). Using body movements is prevalent in Early Preschool (78.4%) and Preschool (31.9%). Enjoying communication with classmates from another country is consistently high across all age groups, peaking in Early Preschool (83.8%).

Table 16. Communication Strategies – Difficulty in Expression

Difficulty in Expression		Almost Never/Never	Sometimes	Very often
The child wants to chat with a classmate.	Kindergarten	4.0%	32.0%	64.0%
	Early Preschool	10.8%	5.4%	83.8%
	Preschool	1.4%	8.7%	89.9%
The child tries to say differently something already said.	Kindergarten	44.0%	48.0%	8.0%
	Early Preschool	18.9%	37.8%	43.2%
	Preschool	4.3%	33.3%	62.3%
The child needs time to think and talk.	Kindergarten	36.0%	44.0%	20.0%
	Early Preschool	5.4%	73.0%	21.6%
	Preschool	10.1%	50.7%	39.1%
The child asks for clarification.	Kindergarten	40.0%	52.0%	8.0%
	Early Preschool	16.2%	78.4%	5.4%
	Preschool	1.4%	47.8%	50.7%
The child uses body movements.	Kindergarten	12.0%	60.0%	28.0%
	Early Preschool	10.8%	78.4%	10.8%
	Preschool	17.4%	50.7%	31.9%
The child enjoys communicating with classmates from another country.	Kindergarten	72.0%	12.0%	16.0%
	Early Preschool	83.8%	10.8%	5.4%
	Preschool	76.8%	8.7%	14.5%

In Table 17, the data highlights how children across different age groups address communication challenges. Avoiding talking is common in Early Preschool (78.9%) and Preschool (80.7%), while seeking help from the educator is prevalent in Preschool (94.5%) and Early Preschool (96.6%). Paraphrasing what they want to say occurs more in Early Preschool (75.0%) and Preschool (69.6%). Saying roughly what they want is notable in Preschool (87.5%), and creating their own words is common in Early Preschool (81.3%). Miming what they want to say is prevalent in Early Preschool (92.9%) and Preschool (51.4%). Asking another child for help is common in Early Preschool (63.6%) and Preschool (82.1%). Using another language to communicate is unanimously reported in Early Preschool and Preschool, with Kindergarten showing that all children report using another language.

Table 17. Communication Strategies – Communication Problems

Communication Problems		Almost Never/Never	Sometimes	Very often
The child avoids talking.	Kindergarten	66.7%		33.3%
	Early Preschool	21.1%		78.9%
	Preschool	19.3%		80.7%
The child	Kindergarten	85.0%		15.0%

paraphrases what he/she wants to say.	Early Preschool	75.0%	25.0%
	Preschool	30.4%	69.6%
The child says roughly what he/she wants	Kindergarten	33.3%	66.7%
	Early Preschool	33.3%	66.7%
	Preschool	12.5%	87.5%
The child creates his/her own words.	Kindergarten	84.2%	15.8%
	Early Preschool	81.3%	18.8%
	Preschool	51.3%	48.7%
The child mimes what he/she wants to say.	Kindergarten	81.0%	19.0%
	Early Preschool	92.9%	7.1%
	Preschool	51.4%	48.6%
The child asks the educator for help.	Kindergarten	72.2%	27.8%
	Early Preschool	3.4%	96.6%
	Preschool	5.5%	94.5%
The child asks another child for help.	Kindergarten	95.7%	4.3%
	Early Preschool	63.6%	36.4%
	Preschool	17.9%	82.1%
The child uses another language.	Kindergarten	100.0%	
	Early Preschool	100.0%	
	Preschool	100.0%	

5. Discussion

This study was initiated to investigate the communication strategies employed by Preschoolers in Greece and Rwanda and to find out whether variables like gender, school grade/age or country predispose children to certain communication strategies.

Gender and Children's Communication Strategy

The analysis of the findings underscores the complexity of gender differences in preschooler communication. While the statistical analysis did not reveal a significant correlation between gender and communication strategies, the subtle variations observed in certain behaviors hint at the nuanced ways in which gender may influence children's communication patterns. By examining individual behaviors within the broader context of gender dynamics, the study offers a deeper understanding of the multifaceted nature of preschooler communication. These findings highlight the importance of moving beyond simplistic notions of gender differences and recognizing the intricate interplay of various factors that shape children's communication behaviors.

Moreover, the study's exploration of gender differences in communication strategies sheds light on the need for nuanced approaches to support children's communication development. While statistical significance was not achieved in all instances, the observed variations provide

valuable insights into potential areas of focus for intervention and support. For instance, the slight differences in behaviors such as reactions when seated next to an educator or displaying attention and understanding suggest that gender dynamics may subtly influence children's social interactions in educational settings. By synthesizing these findings with existing literature on gender and communication, educators and practitioners can develop targeted strategies to promote inclusive and effective communication practices in early childhood education.

Additionally, the absence of statistical significance in certain behaviors prompts further inquiry into the underlying mechanisms driving gender differences in preschooler communication. Future research could delve deeper into contextual factors, such as socialization processes and cultural norms, to elucidate how these dynamics shape children's communication strategies. By integrating qualitative approaches and longitudinal studies, researchers can uncover the nuanced ways in which gender intersects with other variables to influence communication development. Ultimately, this holistic understanding will inform the design of evidence-based interventions aimed at fostering equitable communication environments that support the diverse needs of all preschoolers.

These findings align with the emerging language studies on gender that frame gender as an intersectional phenomenon and further argue that language or communication is not gendered (McConnell-Ginet 2011; Baxter 2006). These studies further argue that even though biased societal stereotypes encode language and communication to specific social labels (for example femininity and masculinity) such associations are misguided as there is no scientific credence (McConnell-Ginet, 2011). For example, studies reveal that there is no gender difference when infants play, but that gender differences are usually evident in the verbal behaviour of the parents during play (Clearfield & Nelson, 2006). This explains the build-up of expectations and biases one might have when examining the differences in the verbal behavior of girls and boys.

Overall, the findings suggest that preschool boys and girls exhibit similar communication behaviors, highlighting the need for further research to explore additional factors that may contribute to variations in communication strategies among young children.

Country/Culture and Children's Communication Strategy

In addition to gender, the study delved into the role of cultural language in shaping communication strategies among children. The findings underscore the significant influence of cultural factors on children's communication behaviors. Specifically, the results suggest that cultural language plays a pivotal role in the differentiation of communication strategies employed by children. This implies that children from diverse cultural backgrounds may exhibit distinct communication patterns, influenced by the linguistic and sociocultural norms prevalent in their respective communities. By recognizing the influence of cultural language on communication strategies, educators and practitioners can better tailor interventions and support strategies to accommodate the diverse linguistic needs of children from various cultural backgrounds.

Furthermore, these findings underscore the importance of fostering cultural sensitivity and

linguistic diversity in early childhood education settings. By embracing and celebrating the linguistic richness of diverse cultural communities, educators can create inclusive learning environments that promote effective communication and enhance the overall development of all children. Thus, the study contributes valuable insights into the multifaceted nature of children's communication behaviors, highlighting the pivotal role of cultural language in shaping communication strategies among young learners.

The findings further reveal that cultural or contextual differences contribute to the qualitative differentiation of communication strategies among children. This is demonstrated by how children from Greece and Rwanda behave in specific situations, such as reacting to others, asking for help, expressing pleasure, and displaying confusion. Indeed, numerous studies support the idea that a child's cultural background, encompassing factors such as religious values, familial habits, community norms, language spoken at home, and historical context, profoundly shapes their interpersonal relationships and learning experiences in various environments (Einfalt, 2019; Ijalba, 2016; Hampton et al., 2017; Kay-Raining Bird et al., 2012; Yu, 2013; Dupre, 2007; Rogoff, 2003). This influence often manifests in a child's personality, self-identification, and learning capabilities. Depending on the cultural milieu of their families or communities, children may exhibit traits ranging from outspokenness to introversion, from apprehension to confidence, and from attention-seeking to modesty (Teinye & Ololube, 2015).

Age/school/grade and Children's Communication Strategy

In the culmination of this study's findings, it was elucidated that age, school grade, or developmental stage significantly contribute to the qualitative differentiation of communication strategies among children. Through meticulous analysis of data collected across various age groups, distinct patterns emerged, shedding light on the evolving nature of children's communication behaviors as they transition from Early Preschool to Kindergarten. Notably, the results revealed a discernible increase in children's communication abilities and social interactions with advancing age and grade levels. This upward trajectory in communication proficiency was evidenced by observable shifts in the frequencies of communication behaviors within each developmental context.

The progression from Early Preschool to Kindergarten heralded a marked enhancement in children's capacity to engage in effective communication and meaningful interaction with peers and educators alike. As children advanced through the educational continuum, there was a notable augmentation in their repertoire of communication strategies and their adeptness in employing them to express emotions, convey needs, and initiate social exchanges. These findings underscore the dynamic nature of children's communication development, suggesting that age-related developmental milestones play a pivotal role in shaping the qualitative nuances of communication strategies. By delineating the intricate interplay between age, school grade, or developmental stage and communication proficiency, this study offers invaluable insights for educators and practitioners seeking to optimize communication support interventions tailored to the unique needs of children across different stages of early childhood development.

Numerous studies (Gooden & Kearns, 2013; Altay & G ü re, 2012; Chen & Shire, 2011) have

established that communication among children evolves with age. Children usually begin communicating with their voice (mostly cries, facial expressions and unintelligible sounds) and body movements before they learn language expressions and articulation (Gooden & Kearns, 2013). This first phase later evolves into better expressions like "words, sentences, and conversations through many methods including gestures, spoken words, sign language, pictorial language systems, and communication boards," (Gooden & Kearns, 2013. P. 1).

6. Conclusion

By and large, effective communication skills play a crucial role in a child's overall learning, growth, and development. The diverse ways in which children employ communication strategies to convey emotions, seek information, and engage in active listening underscore the importance of fostering dialogic literacy among them. Furthermore, it is essential to recognize that children naturally adapt to various communication approaches based on factors such as their cultural backgrounds, school grade/ages, and developmental stages. Therefore, when cultivating dialogic literacy among preschoolers, it is imperative to consider these individual differences. As for further research, exploring specific methodologies and interventions tailored to address these factors could provide valuable insights for enhancing communication development in early childhood education.

References

Al-Adeimi, S., & O'Connor, C. (2021). Exploring the relationship between dialogic teacher talk and students' persuasive writing. *Learning and Instruction*, (71), 101388. https://doi.org/10.1016/j.learninstruc.2020.101388

Alexander, R. J. (2018). Towards dialogic teaching: Rethinking classroom talk. *Dialogic Education, 6*(1), 1-14.

Altay, F. B., & Gure, A. (2012). Relationship among the parenting styles and the social competence and prosocial behaviors of the children who are attending state and private preschools. *Educ. Sci.: Theory Pract. 12*, 2712-2718.

Baxter J. A. (2006). *Speaking out: the female voice in public contexts*. Palgrave Macmillan, London.

Bereiter, C., & Scardamalia, M. (2005). Technology and literacies: from print literacy to dialogic literacy. In N. Bascia, A. Cumming, A. Datnow, K. Leithwood, & D. Livingstone (Eds.), *International handbook of educational policy* (pp. 749-762). Dordrecht, The Netherlands: Springer.

Caviglia, F., Dalsgaard, C., Delfino M., & Pederson, M. (2017). Dialogic Literacy: contexts, competences and dispositions. *L1-Educational Studies in Language and Literature*, *17*, 1-38.

Chen, J., & Shire, H. (2011). Strategic Teaching: Fostering Communication Skills in Diverse YoungLearners. *Young Children*, *66*(2), 20-27

Clearfield, M., & Nelson, N. (2006). Sex differences in mothers' speech and play behavior with 6-, 9-, and 14-month-old infants. *Infant and Child Development, 15*(6), 647-654.

Creech, A., & Hallam, S. (2011). Learning and teaching about musical understanding: Insights from a dialogic approach. *Music Education Research, 13*(3), 265-283.

Dai, Y. G., Burke, J. D., Naigles, L., Eigsti, I. M., & Fein, D. A. (2018). Language abilities in monolingual- and bilingual- exposed chil-dren with autism or other developmental disorders. *Research in Autism Spectrum Disorders, 55*(1), 38-49.

De Bruin, L. R. (2018). Dialogic Communication in the One-to-One Improvisation Lesson: A Qualitative Study. *Australian Journal of Teacher Education*, *43*(5).

Dupre, J. (2007). *Trees and forests: A concise guide in color*. Firefly Books.

Einfalt T. J. (2019). Using Dialogic Approach to Develop Intercultural Competence Among University Students. *Doctoral Thesis*. Retrieved from https://eprints.qut.edu.au/134242/1/Johanna_Einfalt_Thesis.pdf

Flecha, R., & Soler, M. (2014). Communicative Methodology: Successful Actions and Dialogic Politics. *Current Sociology, 62*(2), 232-242. https://doi.org/10.1177/0011392113515141

García-Carrión, R., & Villardón-Gallego, L. (2016). Dialogue and interaction in early childhood education: A systematic review. *REMIE –Multidisciplinary Journal of Educational Research*, *6*(1), 51-76.

Gooden, C., & Kearns, J. (2013). The Importance of communication skills in young children. Research Brief. *Human Development Institute.* Retrieved from https://eric.ed.gov/?id=ED574738

Hampton, S., Rabagliati, H., Antonella, S., & Fletcher-Watson, S. (2017). Autism and bilingualism: A qualitative interview study of parents' perspectives and experiences. *Journal of Speech Lan-guage and Hearing Research, 60*(2), 435-446.

Hart, C. H., Newell, L. D., & Olsen, S. F. (2003). Parenting skills and social-communicative competence in childhood. In J. O. Greene, & B. R. Burleson (Eds.), *Handbook of communication and social interaction skills* (pp. 753-797). Mahwah, NJ: Lawrence Erlbaum Associates.

Ijalba, E. (2016). Hispanic immigrant mothers of young children with autism spectrum disorder: How do they understand and cope with autism?. *Journal of Speech, Language, and Hearing Research*, *25*(2), 200-13. https://doi.org/10.1044/2015_AJSLP-13-0017

Jones, D. E., Greenberg, M., & Crowley, M. (2015). Early social-emotional functioning and public health: The relationship between kindergarten social competence and future wellness. *American Journal of Public Health*, *105*(11), 2283-2290.

Kay-Raining Bird, E., Lamond, E., & Holden, J. (2012). Survey of bilingualism in autism spectrum disorders. *International Journal of Language and Communication Disorders, 47*(1), 52-64.

Law, J., McBean, K., & Rush, B. (2011). Communication skills in a population of primary

school-aged children raised in an area of pronounced social disadvantage. *International Journal of Language & Communication Disorders, 46*(6), 657-664.

Lefstein, A., & Snell, J. (2013). *Better than best practice: Developing teaching and learning through dialogue*. London, U.K.: Routledge.

Leseman, P. P. M. (2014). Early childhood education and care for children from low-income or minority backgrounds. In J. D. Wright (Ed.), *International Encyclopedia of the Social & Behavioral Sciences* (2nd ed., Vol. 7, pp. 681-686). Elsevier.

Locke, A., Ginsborg, J., & Peers, I. (2002). Development and disadvantage: implications for the early years and beyond. *International Journal of Language and Communication Disorders, 37*(1), 3-15.

Matusov, E. (2009). *Journey into dialogic pedagogy*. NY: Nova Science Publishers.

McConnell-Ginet, S. (2011) *Gender, Sexuality, and Meaning: Linguistic Practice and Politics.* Oxford: Oxford University Press.

MCDowell, K. B., Lonigan, K. J, & Goldenstein, H. (2007) Relations among socio-economic status, age, and predictors of phonological awareness. *Journal of Speech, Language and Hearing Research, 50*, 1079-1092.

Mercer, N., & Littleton, K. (2007). *Dialogue and the Development of Children's Thinking: A Sociocultural Approach*. London: Routledge

Michaels, S., & O'Connor, C. (2015). Conceptualizing talk moves as tools: Professional development approaches for academically productive discussion. In L. B. Resnick, C. Asterhan, & S. N. Clarke (Eds.), *Socializing intelligence through talk and dialogue* (pp. 347-362). Washington, DC: American Educational Research Association

Mulder, H., Hoofs, H., Verhagen, J., Van der Veen, I., & Leseman, P.P.M. (2014). Psychometric properties and convergent and predictive validity of an executive function test battery for two-year-olds. *Frontiers in Psychology*, *5*, 1-17.

Oikonomou, N., & Papadopoulos, I. (2024). Literacy of Communication in Early Childhood Education: Investigating communication strategies in Greece. *European Journal of Education Studies, 11*(7), 26-51.

Papadopoulos, I. (2020). *From translanguaging pedagogy to classroom pedagogy: Supporting literacy, communication and cooperative creativity*. Thessaloniki: Disigma Publications.

Papadopoulos, I. (2021). Translanguaging as a Pedagogical Practice in Primary Education: Approaching, Managing and Teaching Diverse Classrooms. In I. Papadopoulos, & Sm. Papadopoulou (Eds.), *Applied Linguistics Research and Good Practices for Multilingual and Multicultural Classrooms.* (2021, pp.147-168). New York: NOVA Science Publisher.

Papadopoulos, I. (2022). Translanguaging as a pedagogical practice for successful inclusion in linguistically and culturally diverse classrooms. In *Handbook of research on policies and practices for assessing inclusive teaching and learning* (pp. 422-448). Hershey, PA: IGI

Global.

Papadopoulos, I. (2024). Investigating dialogic literacy from persuasive perspectives in monolingual and bilingual preschoolers. In V. Zorbas (Ed.), *Dialogues on Teaching and Learning in Multicultural and Multilingual Environments*. New York: NOVA Science Publishers.

Papadopoulos, I., & Bourogianni, M. E. (2024). Delving into Word and Print Awareness in 4-Year-Old Children. *British Journal of Education, 12*(3), 41-54 (Impact Factor: 7,89).

Papadopoulos, I., & Hathaway, T. (2024). *Multilingual Early Childhood Education: Modern Approaches and Research.* New York: NOVA Science Publishers

Papadopoulos, I., & Jansen, P. (2024). Insider Views and Practices of Translanguaging Classrooms in Early Childhood Education. *World Journal of Educational Research, 11*(3), 1-21.

Papadopoulos, I., & Papadopoulou, E. (2023). *Pedagogical and Research Perspectives on Language Education*. New York: NOVA Publishers.

Papadopoulos, I., & Shin, J.K. (2021). Developing young foreign language learners' persuasive strategies through intercultural. *Research Papers in Language Teaching and Learning, 1*(1), 185-202

Phillipson, N., & Wegerif, R. (2016). *Dialogic Education: Mastering Core Concepts ThroughThinking Together.* Taylor & Francis.

Poulin-Dubois, D., & Brosseau-Liard, P. (2016). The Developmental Origins of Selective Social Learning. *Current Directions in Psychological Science, 25*(1), 60-64. https://doi.org/10.1177/0963721415613962

Purcell, J., Lee, M., Biffin, J., *et al.*. (2012). *Supporting Bilingual Children in Early Childhood*. Retrieved from www.learninglinks.org.au

Rogoff, B. (2003). *The Cultural Nature of Human Development*. Oxford University Press.

Scardamalia, M. (2005). How does collaboration contribute to knowledge building?. In H. G. Lehtinen, E. L. Vauras, K. Salonen, & E. B. Graesser (Eds.), *Computer Supported Collaborative Learning: Proceedings of the International Conference on Computer Supported Collaborative Learning 2005* (pp. 267-273). Lawrence Erlbaum Associates.

Teinye, B., & Ololube, N. (2015). An Evaluation of Socio-Cultural Barriers to Reading and Writing among Rivers State Children: Identifying an Ideal Communicative Approach. *International Journal of Psychology and Behavioral Sciences, 5*(1), 6-15.

van der Veen, C., de Mey, L, van Kruistum, C., & van Oers, B. (2017). The effect of productive classroom talk and metacommunication on young children's oral communicative competence and subject matter knowledge: An intervention study in early childhood education. *Learning and Instruction, 48*, 14-22.

van der Veen, C., Dobber, M., & van Oers, B. (2018). Facilitating teacher professional development in dialogic teaching: Lessons from a Dutch longitudinal study. *Professional Development in Education, 44*(5), 667-682.

Veiga, G., De Leng, W., Cachucho, R., Ketelaar, L., Kok, J. N., & Knobbe, A. (2017). Social competence at the playground: Preschoolers during recess. *Infant and Child Development*, *26*(1), 1-15.

Wasik, B. A., Hindman, A. H., & Snell, E. K. (2016). Book reading and vocabulary development: A systematic review. *Early Childhood Research Quarterly, 36,* 318-328.

Wegerif, R. (2013). *Dialogic: Education for the Internet Age*. London: Routledge.

Wegerif, R., Mercer, N., & Major, L. (2019). Using computer-based dialogic argumentation to improve the quality of classroom talk and student learning. *Computers & Education, 137*, 127-139.

Yu, B. (2013). Issues in bilingualism and heritage language mainte-nance: Perspectives of minority-language mothers of children with autism spectrum disorders. *American Journal of Speech-Language Pathology/American Speech-Language-Hearing Association*, *22*(1), 10-24.