

## **Chapter 5**

# **Development of the G-ESDM Classroom Curriculum**

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Now that we have laid down the foundations for setting up the G-ESDM learning environment and developing learning objectives, we can focus on the topic of the classroom curriculum. First, we will discuss the daily group preschool activity routines within which teaching is embedded, and how the transdisciplinary team works within the G-ESDM program to plan and deliver the curricular activities. As we detail in this chapter and throughout this book, the choreography of daily classroom activities is organized around two main themes: (1) curricular activities incorporate individual child objectives within group routines; and (2) teaching strategies based on applied behavior analysis are embedded within everyday playroom routines. As we will discuss in the last part of the chapters, a careful delineation of the staff roles and responsibilities is needed to achieve these goals.

### **Curricular Activities in the G-ESDM—Incorporating Individual Child Objectives Within Group Routines**

As we know all too well, placing a child with autism in a typical toddler and preschool program rich with activities and interactions does not magically resolve the cognitive, social, adaptive, play, and communication difficulties that characterize children with ASD. This kind of growth requires individualized treatment objectives and strategies. In Chap. 3, we have detailed the procedures used in the G-ESDM to generate individualized treatment plans. Translating that individualized plan into the G-ESDM group treatment setting requires that each child's learning objectives provide ideas for creating the contents of the group activities, including the materials used and the complexity of actions, language, and play involved. One of the main tasks of the team leaders and early educators is to develop group activities that address the individual objectives of each child involved. If activities are planned without taking into account the range of different skills and needs of

each child in the classroom, there will inevitably be some children who will not benefit from the activity, even if they enjoy it. Enjoyment is not learning, though it certainly motivates learning!

An example of how individual objectives are embedded into group activities is given below.

A teacher is planning a small group cooking activity with Sam, Lessie, Ruth and Rick, based on making orange juice using an electric juicer. A second adult will act as an 'invisible support' throughout the activity, i.e., she facilitates children's participation and response to the teacher without distracting their attention from the teacher (a detailed description of the 'invisible support' role is provided later in this chapter).

While planning the activity, the teacher reviews the objectives for each child in her group to identify (a) what objectives can be meaningfully incorporated into the activity, (b) the resources that she will need to target these objectives, and (c) how the environment will need to be organized for this activity.

The teacher identifies the following objectives to incorporate into the activity;

Sam combines vocalization and gesture to communicate 'yes/no', follows 2-step instruction, shares interests with others;

Rick points proximally to request from choice of two, requests help using vocalization or gesture, washes hands, and uses pincer grasp;

Lessie uses 'me/my/you' pronouns, passes items to peers when directed, and retrieves items from around the room; and

Ruth uses language/vocalization combined with eye contact, responds to 'show me', wipes face independently, understands, and responds to 'give me/point to/show me'.

The cooking activity is set up at a rectangular table that is close to a bench, the sink, and a bin. The teacher places the cups and straws on a tray on the bench, within reach of the children in her group, and places the remaining materials on the table in front of her chair. The teacher, Sam, and Rick wash their hands together and are the first to sit, with the 'invisible support' adult helping Ruth and Lessie to wash their hands and join the activity. The teacher shows everyone how to push an orange onto the electric juicer and says 'Look! We made orange juice', while pointing to the juice that is now in the jug of the juicer. The teacher asks Lessie 'whose turn?'. Lessie responds 'my turn', and the teacher hands Lessie an orange and moves the juicer closer to Lessie. While Lessie has a turn, the teacher holds up an orange and asks the other children 'is this a banana?' and then models 'no' with playful affect. The teacher then put the orange on her head and asks 'is this a hat?', while looking at Sam. When Sam responds 'no', the teacher begins to shake her head playfully, and Sam also starts shaking his head while saying 'no!'. The teacher asks Lessie to pass the juicer to Rick and then holds up two oranges and asks Rick 'Want big or little?'. Rick points to the big orange. The 'invisible support' assists Rick to use the juicer. The teacher holds up the orange that Lessie has just juiced and asks 'is the orange all gone?' and Sam nods and answers 'yes'. Rick appears hesitant about the sensation of the electric juicer and moves his hand away from the juicer, while still holding the orange. The teacher comments 'it shakes' and waits, then extends her hand and pauses before asking 'want help?'. Rick gives her the orange and the teacher says 'squeeze' with a playful affect while using the juicer. The teacher looks at each child and asks each of them to help her. Sam and Ruth each put one hand on top of the teacher's hand and then she narrates 'squeeze' as they push onto the juicer and then lifts her hand up a little and pauses. Ruth looks at the teacher and says 'squeeze' and she then squeezes the orange again, while they all narrate 'squeeze'. Lessie joins in too when the teacher gestures for her to put her hand onto the orange. Rick

joins in with support from the ‘invisible support’ adult, by putting one hand on top of the teacher’s hand. The teacher pulls the orange off and asks Ruth ‘is it all gone now?’ and Ruth answers ‘yes’. The teacher then turns to Sam and says ‘where should the orange go?’ and Sam answers ‘in the bin!’. The teacher puts the orange on the table and tells Sam ‘pick up the orange and put it in the bin’. Initially, Sam does not move toward the bin, so the ‘invisible support’ adult acts to assist Sam to pick up the orange and to throw it in the bin. The teacher asks Ruth ‘give me a little orange’ and Ruth passes the little orange to the teacher, who then asks Sam ‘do you want a turn?’. Sam responds ‘yes’ while nodding his head. The activity continues with each child taking turns to use the juicer, helping one another to squeeze the oranges.

As highlighted in this vignette, there are several components that need to be planned in addition to which objectives will be targeted for each individual child. One component concerns material choices, to ensure that the materials are motivating and appropriate to the level of play for each child, and support engagement of all children in the group activity. For example, if you are working on a construction activity with 3 children and 1 child is especially motivated by cars, it can be helpful to add cars to the set of materials to maintain the child’s motivation throughout the activity.

A second component concerns how each child’s individual objectives shape the course of the activity. For example, during an activity using blocks, one child might be working on color matching, another on matching quantities, and a third child on counting to ten, and the adult will differentiate the activity to target the three objectives using the same set of materials. By ensuring that the materials fit the interests, skills, and objectives for each child in the activity, we are supporting children to engage in activities in ways that move their learning forward; all children (and adults!), including toddlers and preschoolers with ASD, can become bored, discouraged, or frustrated when they are asked to perform tasks that are too difficult or too easy.

Other components that require consideration include the staff roles during the activity and child positioning in the activity. As detailed in Chap. 6, decisions about how to ‘use’ the adults and where to position the children are influenced both by the group needs and by the individual objectives of each child (i.e., two children with objectives around ‘passing objects to a peer’ should be sat near each other).

## **Embedding Direct Teaching for Children with Autism Within Daily Routines**

In order to ‘fill in’ the learning deficits that have accumulated from the past lack of social learning, the adults who are leading each activity need to ensure that learning objectives for that activity are actively targeted and that enough repetition is provided to promote rapid child learning. Child progress in the moment dictates how many repetitions are needed. In a small group activity containing 2–4 children, we plan to provide learning opportunities at a rate that is greater than 1 per minute for

each child, which maintains a lively pace and keeps children attending and expecting frequent interactions.

A preschool environment provides a variety of experiences across each day and week to allow for active teaching across all developmental domains and bring the community culture into children’s daily lives. While certain group activities are more conducive to targeting some objectives than others (e.g., playground activities like the obstacle course or trampoline are more suitable for targeting gross motor skills than self-care skills), in the G-ESDM, we seek to address multiple objectives from varying domains in each activity. Doing so increases the number of learning opportunities each child has and fosters generalization of skills across daily routines. Therefore, across organized group activities, play routines, and daily care routines (e.g., mealtime, hygiene, and dressing/undressing), each interaction and each moment is rich with social learning opportunities that foster imitation, joint attention, communication, language, and social play.

As an example, the communication objective of identifying possessive pronouns (i.e., ‘mine’ and ‘yours’) is easily taught in daily care routines; for instance, when retrieving belongings from around the playroom (‘Where’s my bottle?’, ‘Where’s your bottle?’, ‘get your hat’, ‘get my hat’) as well as toy play activities (‘Where’s your car?’, ‘get my car’, ‘look at my tower!’). Similarly, the objective of imitating oral facial movements can be fit into book reading routines (for example, when the teacher and children imitate the facial expressions of characters in the book), joint activity routines (for example, when children imitate a ‘blow’ movement to request more bubbles during a bubble routine), and meal routines (for example, when children imitate the teacher’s face as she makes exaggerated ‘yum!’, ‘yuck!’ faces when eating her meal).

G-ESDM teachers, like other preschool teachers, develop daily and weekly schedules of activities to fill each day. Additionally, to ensure that curricular activities include direct teaching for children with ASD, they also need to plan how to target and embed the objectives of all children in multiple activities each day and across the entire week. Below is an example of a classroom daily schedule that highlights the developmental domains within which treatment objectives are developed for each child.

Time	Activity	Learning objectives that can be targeted
9.00–9.30	Arrival of children—transition to playroom and free play	Personal independence (e.g., hang bags, coats off, hang coats), social skills (greetings)
9.30–10.30	Play centers (can include one-to-one teaching for children who are not progressing on specific objectives; see Chap. 8)	Play, fine-motor skills, cognitive skills, receptive/expressive communication, imitation, social skills
10.30–11.00	Focused teaching and learning session 1	

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Time	Activity	Learning objectives that can be targeted
	<ul style="list-style-type: none"> <li>• Group time: ‘Hello’ song and song/book-time</li> </ul>	Expressive communication, receptive communication, imitation, joint attention, social skills
	<ul style="list-style-type: none"> <li>• Small group activities</li> </ul>	Expressive communication, play, fine motor, imitation, cognition, personal independence, social skills
11.00–11.15	Outside play	Gross motor, social skills (e.g., invite peers to play, sensory social routines with adults), receptive and expressive communication
	Transition to lunch	Personal independence (e.g., wash/dry hands)
11.15–11.45	Lunch time	Personal independence (e.g., using utensils, wipe faces), Social skills (e.g., using adult name to request), expressive communication, receptive communication, joint attention, imitation
11.45–12.15	Rest time	Personal independence, play (e.g., play independently)
12.15–1.00	Activity centers <i>Art, symbolic/functional play, construction</i>	Joint attention, fine motor, expressive communication, receptive communication, Cognition, play, social skills (e.g., passing items to peers)
1.00–1.30	Snack time	Personal independence, social skills, expressive communication, receptive communication, joint attention, imitation
1.30–2.00	Outside play	Gross motor, social skills, receptive and expressive communication
	Focused teaching and learning session 2	
	<ul style="list-style-type: none"> <li>• Group time: book reading</li> </ul>	Receptive and expressive communication, imitation, joint attention, social skills
2.00–2.30	<ul style="list-style-type: none"> <li>• Whole group activities: special afternoon activities</li> </ul>	Gross motor (e.g., obstacle course), social skills

Leaders can ask themselves a number of questions that will help organize the teaching component within each activity: ‘What objectives am I teaching in this

activity?', 'How many opportunities am I giving the children to learn the target behavior?', 'Are teaching episodes based on the child's spontaneous interest?', 'Are the materials appropriate for targeting each child's objectives?', 'What are the roles and responsibilities of all the adults involved in this activity?', 'Are the materials motivating to the child?', 'How can this goal be targeted across the day and week?', 'Are there a range of different experiences and activities available as part of the curriculum?', 'Do the curricular activities incorporate the children's current interests?' As part of the planning process, are curricular activities being adapted to meet the learning needs and interests of each child in the group?

## **How to Make This Happen: Team Cooperation and Daily 'Symphony'**

Successful implementation of the G-ESDM curriculum relies heavily on effective team work. This involves a high degree of cooperation, planning, and communication among the team members. At any point during each curricular activity, team members need to know where they are supposed to be and what they are supposed to be doing. This is achieved by establishing clearly defined roles and responsibilities for each adult in the classroom across each curricular activity in the day. If you think of the classroom team as an orchestra, with each specialist having their own role that contributes to the overall performance, one person is required to act as the 'director of the orchestra' to coordinate the contribution of each orchestra member. This role is usually played by the classroom teacher, who will schedule and plan the daily 'symphony' of the team. This involves indicating who does what, when, and where, during each curricular activity, including the adult roles in transitioning children to and from activities. The classroom roles and responsibilities schedule can be organized into intervals, for example, 15-min or 30-min intervals or longer, depending on the individual needs of the classroom.

Roles and responsibilities need to be spelled out for every daily routine. In the example below, each adult's roles during the morning arrival routine are clearly planned out and documented in advance. One adult member is assigned to greet the children and families and support their transition into the playroom (e.g., greet child, help child to hang bag) and assists them to select a play activity. The other adults in the room are stationed strategically in designated areas (e.g., block corner, outside areas) to engage children in play and target learning objectives.

Below, we illustrate an example of the playroom roles and responsibilities schedule.

Time	Lead teacher 1	Paraprofessional 1	Paraprofessional 2	Lead teacher 2
9.00–9.15	Greet parents and children on arrival, transition children into playroom	Set up yard	Supervises play activities	Teaching during free play
9.15–10.10	Monitor overall playroom, ‘floating’ between groups to support engagement in activities and redirect children as needed	Teaching during free play	Supervises play activities	Teaching during free play
		Toileting as required	Toileting as required	
10.10–10.30	Transition children outside	Supervise children outside	Supervise children outside	Transition children outside
10.15–10.25	Toilet children as required	Gross motor teaching	Toileting as required	Teaching during outside play
10.25–10.30	Set up small group activity	Gross motor teaching	Supervise children outside	Set up small group activity
10.30–11:00	Conduct small group activity. When finished transition, last children. Collect data	Provides support small group activity. At the end of the activity, transition first children outside, and supervises outside play	Provides support small group activity. At the end of the activity, transition first children outside, and supervises outside play	Conduct small group activity. When finished, transition last children. Collect data

## Supporting Transitions

While most of the strategies to facilitate the smooth implementation of the ‘daily symphony’ are based on best practice in education, some specific procedures are required in the G-ESDM to facilitate the transitions between activities that occur frequently within a group environment. This process is accomplished with the ‘lead–bridge–close’ transition procedure (see Rogers & Dawson, 2010), which involves a ‘lead’ to open the activity (e.g., getting materials out) and draw children’s attention toward the new activity (e.g., saying ‘look, play-doh!’), a ‘bridge’ to facilitate moving from the previous to new activity, and a ‘close’ to pack away materials from the previous activity and assist the last children to transition to the

new activity. For example, at lunchtime, the lead will ‘open’ the lunch activity by helping the first 1–2 children to wash their hands, walk independently to the lunch table, and sit down; the ‘bridge’ supervises the remaining children to wash their hands and independently transition to the lunch table; and the ‘close’ will close down the previous activity and may help any remaining children to wash their hands and sit at the table.

## **Roles and Responsibilities in the G-ESDM**

### ***Lead***

One of the most important roles within any G-ESDM activity is the role of the ‘Lead’. The lead is the adult responsible for leading the curricular activities, including small-group and whole-group activities. This adult is responsible for eliciting and maintaining children’s engagement throughout the curricular activity, responding to children’s cues, and targeting individual objectives throughout the activity. The lead is also responsible for coordinating the roles of additional staff during the activity and during transitions (e.g., the ‘invisible support’ and the ‘float’ adults; described below). While curricular activities are typically planned by teachers/educators, it is important to note that the role of lead can be played by any professional trained in the ESDM.

### ***Invisible Support***

A key role in the G-ESDM classroom is the ‘invisible support’, used during activities in which children are expected to attend to and receive instruction from one adult (the ‘lead’). The purpose of the invisible support role is to facilitate children’s participation and response to the lead without distracting their attention from the lead. As we mentioned in Chap. 1, children with autism have difficulties processing information from multiple sources, so if two people speak to them at the same time or interact at the same time, most information will be lost. Therefore, it is important that children focus on one source of information—the lead. During small circle activities, the ‘lead’ faces all the children, takes center stage, and gains the children’s full attention. The ‘invisible support’ person will be positioned behind the children, ready to help in several ways: (1) by silently prompting children from behind in response to the lead’s interactions with the child when needed, (2) by managing challenging behaviors, and (3) by redirect children to the activity when directed explicitly by the lead. This role can be played by any of the staff members.



## ***Float***

Another key role to run curricular activities is that of the ‘float’. During play activities (for example, art and craft activities, blocks, and symbolic play), the ‘float’s role is to monitor the overall playroom, and ‘float’ from one group to the other to support sustained engagement in activities and to redirect children to the activity centers as needed (i.e., if they are not engaged in goal directed play). This makes it easier for the activity ‘leads’ to engage children in uninterrupted play and learning experiences. The ‘float’ liaises with the leads in many ways, some of which may involve (1) providing particular materials, (2) rearranging children at the play center, (3) transitioning children into and out of the play center, (4) ensuring that the number of children at each play center is appropriate, (5) encouraging children with high needs and/or disruptive behaviors to join different groups, rather than being all in the same group, and (6) and ensuring that the lead is given time before receiving more children at the play center to take data or review objectives.

These roles are illustrated in the following vignette:

Three play-activity areas are set up, including a ‘home corner’, an ‘art area’, and a ‘construction area’. In the home corner, the adult assigned to act as the ‘lead’ is targeting teaching objectives during a ‘washing babies’ activity, while the leads in the art and construction areas are working on teaching goals during a drawing and a block activity, respectively. Carly, the adult assigned to play the ‘float’ role observes that while the majority of children are engaged in an activity, Kyle is lining up toys on the floor. She notices that there are four children in the home corner already, but only two children at the construction and the drawing areas, and decides to check with the ‘leads’ who are managing the drawing and construction activities if Kyle can join their group. When both ‘leads’ indicate that they have capacity to include Kyle in their groups, Carly asks Kyle ‘drawing or blocks?’ while pointing to each of the activities. Kyle stands and walks toward the drawing table and Carly walks with him, supporting him to settle into the activity by providing access to markers and paper while the activity lead finishes her routine with another child. Carly reminds the ‘lead’ about the key learning objectives for the newly transitioned child that can be targeted at the activity, which include ‘following one-step verbal instructions’ and ‘sharing materials with peers’. In the group, Anthony is the adult playing the ‘invisible support’ role. He prompts Kyle from behind when he does not respond twice to the instruction of passing a marker to another child. Carly leaves the drawing table to assist other groups/children after observing that all three children, including Kyle, are engaged in the activity.

## **Is the Intervention Being Delivered as Planned? Fidelity Measures Within the G-ESDM**

We have developed a number of implementation fidelity measures in order to assist teams to deliver the G-ESDM and provide guidance on what to do, and how to do it properly. By ‘fidelity’, we refer to the degree to which prescribed elements of an intervention are actually delivered. While the adults delivering the G-ESDM might

agree in principle on each teaching strategy of the model, all the complexities that arise with toddlers and preschoolers in the dynamic group setting can derail the best of plans. Research shows that in the context of the many duties, tasks, and constraints of community group settings, the ‘active ingredients’ provided by the teaching strategies may become diluted—this, in turn, might negatively affect the program outcomes (Magiati, Charman, & Howlin, 2007; Reichow & Barton, 2014). A fidelity tool can help adults evaluate whether the core ingredients of the program are actually being implemented consistently. Additionally, measuring fidelity frequently helps those responsible to ensure the quality and rigor of the program over time and avoid treatment ‘drift’ (i.e., gradual alteration of the intervention protocol). The three fidelity measures outlined below are critical to establish and maintain a high-quality G-ESDM program.

### ***G-ESDM Classroom Implementation Fidelity Tool***

The G-ESDM Classroom Implementation fidelity tool is designed to support lead educators/therapists to assess adherence to the G-ESDM procedures and curriculum standards (including physical arrangement of the classroom and staff roles and responsibilities). A copy of the tool is available in Appendix. The G-ESDM Classroom Implementation fidelity tool uses a Likert-based 3-point rating system aimed at measuring aspects of the classroom setup and delivery of the G-ESDM curriculum. It is designed to allow the team to rate the classroom’s adherence to the G-ESDM principles, and it is generally completed by a trained observer within a 45-min to 1-h observations period. ‘Fidelity’ is achieved when all the key components of the program described below are implemented in line with the ESDM principles and standards to a high level of accuracy (80 % or above; see Appendix for details on scoring procedures and fidelity criteria). The specific classroom implementation aspects covered include classroom setup, provision of opportunities for child participation, learning and peer interaction across daily activities, management of transitions, management of group activities (including individualization of teaching within group activities), data collection, staff roles/responsibilities and teamwork, emotional atmosphere in the classroom, and program individualization. This tool should be utilized every quarter within each G-ESDM classroom.

### ***G-ESDM Small Group Activity Fidelity Tool***

The G-ESDM Small Group Fidelity Tool is designed to assess adherence to the G-ESDM treatment strategies when the adult is working with 2–4 children within an activity. This fidelity tool is briefly described below, and a copy of the tool is available in the appendix. The tool uses a Likert-based 5-point rating system and covers 13 key intervention procedures. These include management of child

attention, quality of behavioral teaching (i.e., the ability to organize teaching episodes in the context of clear antecedent-behavior-consequence sequences embedded in play routines), the accurate use of instructional techniques such as fading, shaping, and prompting, adult ability to modulate child affect and arousal, management of unwanted behaviors using positive approaches, use of strategies to facilitate peer interaction, use of turn-taking, optimizing child motivation for participation in activity, use of positive affect, sensitivity and responsivity to child communications, targeting multiple and varied communicative functions (e.g., requesting, commenting, protesting, labeling, greeting), appropriateness of adult language for child's language level, use of joint activity routines (articulated around a setup stage, the establishment of a theme, a variation on the theme, and a clear closure), and smooth transitions between activities that maximize child interest and engagement. This tool is generally completed during a live observation of the small group activity. 'Fidelity' is achieved when all the key components of the program described below are implemented in line with the ESDM principles and standards to a high level of accuracy (80 % or above). This tool should be utilized at least every quarter with all G-ESDM staff.

### ***G-ESDM Management and Team Approach Fidelity Tool***

The G-ESDM Management and Team Approach fidelity tool is designed for managers and their teams to assist with designing and reflecting on their workplace G-ESDM practices. It uses a Likert-based 3-point rating system, and it is generally completed by senior staff (including manager) on a biannual basis. Specific areas evaluated by the tool include quality of the transdisciplinary team approach, team leaders' management skills, implementation of the ESDM Curriculum Assessments and development of individualized objectives, data collection, management of allied health specialists, communication between team members and between management and team, team culture, and organizational culture. 'Fidelity' is achieved when all these keys are implemented in line with the ESDM principles and standards to a high level of accuracy (80 % or above). See Appendix for a copy of the tool.

## **Conclusions**

In this chapter, we focused on the 'daily choreography' of the G-ESDM classroom. Consistent with the principles detailed in previous chapters, teaching in the G-ESDM program is embedded in daily routines and is based on a naturalistic format. Classroom activities must occur within in a typical learning environment and provide naturalistic learning opportunities, i.e., they are based on 'real-world' situations and materials that would normally be present in a typical learning

environment and contain elements that are meaningful and rewarding for each child involved in the activity. The aim of a naturalistic activity schedule is to engage the children in age-appropriate experiences involving routines and materials that children typically encounter in their everyday environments. The more artificial and idiosyncratic the curricular activities and materials involved are the less likely the child will be likely (1) to find peers who are familiar with those toys and activities, and (2) to have an opportunity to use the learned routines and skills outside of the teaching environment. To evaluate how naturalistic an activity is, some questions that a teacher can ask are as follows: Would a typically developing child enjoy this?, How likely is it to see an activity like this in a typical preschool program?, How likely is the child to meet someone who is familiar with the routines and objects used in the activities?, Are these materials age-appropriate and common? In this context, frequent teaching episodes take place (more than 1 every minute per child), which incorporate individual child objectives within group routines and are carried out by the team members work as a coordinated and cooperative unit. A clear delineation of roles and responsibilities and the use of fidelity tools are critical to implement the daily curriculum successfully. Within the framework of naturalistic activities, a number of treatment strategies based on developmental principles and on the science of applied behavior analysis are delivered to promote continuous learning opportunities. These strategies are the focus of the following chapter.

## References

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