

**THE DEVELOPMENT OF CLASSROOM  
REORGANISATION PROGRAMME FOR  
REDUCING BEHAVIOURAL PROBLEMS  
AMONG SEVERE AUTISM SPECTRUM  
DISORDER STUDENTS IN THE UNITED ARAB  
EMIRATES**

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by

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## **LIST OF ABBREVIATIONS**

ABA	Applied Behavioral Analysis
ASD	Autism Spectrum Disorder
BIP	Behavioral Intervention Plans
CROP	Classroom Reorganization Program
EBP	Evidence-Based Practice
FBA	Functional Behavior Assessment
FR	Free Reinforcement
LRE	Least Restrictive Environment
PBS	Positive Behavior Support
PECS	Picture Exchange Communication System
POD	People of Determination
TEACCH	Treatment and Education of Autistic and Communication Handicapped Children

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**PEMBANGUNAN PROGRAM PENYUSUNAN SEMULA BILIK DARJAH  
BAGI MENGURANGKAN MASALAH TINGKAH LAKU DALAM  
KALANGAN PELAJAR GANGGUAN SPECTRUM AUTISME TAHAP  
TERUK DI EMIRIAH ARAB BERSATU**

**ABSTRAK**

Emiriah Arab Bersatu berminat dalam meningkatkan kualiti hidup dan melatih pelajar-pelajar berkeperluan khas serta menyediakan semua program terbaik, perkhidmatan, dan individu yang berkeelayakan untuk melayani kategori masyarakat ini. Memang, salah satu cabaran yang paling mengganggu bagi guru-guru pelajar yang mengalami Gangguan Spektrum Autisme adalah masalah tingkah laku mereka dan interaksi yang sewajarnya dengan orang-orang dalam masyarakat luar. Tujuan kajian ini adalah untuk mencipta pakej program yang terdiri daripada dua bahagian, iaitu mereka-bentuk organisasi fizikal baru untuk bilik darjah pelajar-pelajar yang mengalami Gangguan Spektrum Autisme yang teruk, dan membangunkan program latihan untuk guru-guru mengenai kaedah penilaian tingkah laku berfungsi, dan pelan intervensi tingkah laku berdasarkan model ADDIE. Objektif kajian ini bertujuan untuk menilai keberkesanan organisasi bilik darjah lama dalam menangani masalah tingkah laku, mengenal pasti keperluan yang sesuai dan modifikasi untuk merancang organisasi bilik darjah yang baru, tahap pengetahuan guru-guru tentang kaedah penilaian tingkah laku yang berfungsi, keberkesanan organisasi bilik darjah yang baru dalam merawat masalah tingkah laku pelajar, dan kecekapan program latihan untuk meningkatkan pengetahuan guru-guru tentang penilaian tingkah laku yang berfungsi. Reka bentuk penyelidikan kajian ini adalah kajian eksperimen kumpulan tunggal, digunakan dengan dua kumpulan sampel. Melaksanakan satu program

intervensi bilik darjah dengan 6 pelajar spektrum gangguan autisma yang teruk, tambahan pula menerapkan satu program latihan untuk 27 guru pelajar spektrum autisma yang teruk mengenai kaedah penilaian tingkah laku yang berfungsi. Bagi mencapai objektif kajian ini, gabungan instrumen data kuantitatif dan kualitatif telah digunakan. Penemuan kajian ini menunjukkan ketidakberkesanan organisasi lama yang digunakan dalam reka bentuk bilik darjah dalam menangani dan mengurangkan masalah tingkah laku di kalangan pelajar, keperluan bagi sistem baru dengan kandungan yang mempertimbangkan keperluan dan masalah individu pelajar, pengetahuan terhad guru-guru tentang konsep dan strategi penilaian tingkah laku yang berfungsi, keberkesanan program latihan dalam meningkatkan pengetahuan guru-guru tentang penilaian tingkah laku yang berfungsi, dan pendekatan secara umum menunjukkan kejayaan yang jelas dalam mengurangkan masalah tingkah laku di kalangan kumpulan kajian kes pelajar. Kajian ini memberikan sumbangan teoretikal dan praktikal, seperti pengetahuan guru-guru tentang penilaian tingkah laku yang berfungsi, piawaian dan garis panduan dalam merancang bilik darjah untuk pelajar-pelajar dengan spektrum autisma, terutamanya mereka yang kesnya teruk, dan membangunkan protokol untuk mengendalikan masalah tingkah laku yang sukar di dalam bilik darjah. Kajian ini juga menunjukkan keberkesanan model ADDIE dalam menentukan keperluan dan membangunkan pakej program, serta kejayaan kedua-dua program intervensi dengan pelajar dan program latihan untuk guru-guru dalam mencapai matlamat mereka.

**THE DEVELOPMENT OF CLASSROOM REORGANISATION  
PROGRAMME FOR REDUCING BEHAVIOURAL PROBLEMS AMONG  
SEVERE AUTISM SPECTRUM DISORDER STUDENTS IN THE UNITED  
ARAB EMIRATES**

**ABSTRACT**

The United Arab Emirates is interested in improving life and training students of special needs and providing all the best programs, services, and qualified individuals to serve this category of society. Indeed, one of the most disturbing challenges for teachers of Autism Spectrum Disorder' students is their behavioral problems and proper interaction with people in the external community. The purpose of this study was to create program' package include two parts, designing a new physical organization for the classroom of severe autism spectrum disorder' students, developing a training program for teachers on functional behavior assessment methods and behavior intervention plan, based on the ADDIE model. The study' objectives aimed to evaluate the effectiveness of the old classroom organization in dealing with behavioral problems, identifying the appropriate needs and modifications for designing the new classroom organization, the level of teachers' knowledge on functional behavior assessment methods, the effectiveness of the new classroom organization in treating students' behavioral problems, and the efficiency of the training program to increase teachers' knowledge on functional behavior assessment. The study' research design is a single-group experimental study, used with the two sample groups. Implementing a classroom intervention program with 6 severe autism spectrum disorder' students, in addition to apply a training program for

27 teachers of severe autism spectrum disorder' students on functional behavior assessment methods. In order to achieve the study's objectives, the combine of quantitative and qualitative data instruments was used. The study's findings showed: the ineffectiveness of the old organization used in classroom design in dealing with and reducing behavioral problems among students, the need for a new system with contents that consider students' individual and specific needs and problems, teachers' limited knowledge on concepts and strategies of functional behavior assessment, the effectiveness of the training program in increasing teachers' knowledge on functional behavior assessment, and the general approach demonstrated clear success in reducing behavioral problems among case study group students. This study made theoretical and practical contributions (teachers' knowledge on functional behavior assessment, the standards and guidelines of designing classrooms for students with autism spectrum disorder, especially those with severe case, developing a protocol for dealing with difficult behavioral problems in the classroom. The study showed the effectiveness of ADDIE model in determining needs and developing the program' package, besides success both of the intervention program with students and the training program for teachers in their goals.

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

This chapter covers a preliminary definition of the study, the nature of the classroom reorganization program, its components, the study's background, as well as the problem statement, the research objectives, the research questions, the research hypotheses, and the study's limitations. Finally, the researcher's operational definitions are presented in this chapter.

This study aims to examine the effect of implementing the Classroom Reorganization Program (CROP), which branches into two sections: classroom organization, functional behavior assessment (FBA), and a behavior intervention plan (BIP) training program, on reducing behavioral problems among students with a severe autism spectrum disorder aged between 8 and 14 years, and increasing teachers' knowledge on functional behavior assessment, through developing CROP by ADDIE Model.

The Classroom Reorganization Program (CROP) is based on Positive Behavior Support (PBS), which is an applied science that uses educational and system change methods (environmental redesign) as well as using mixed positive strategies inside the classroom to reduce behavioral problems in the field of developmental disabilities (Chakrabarty, 2020).

The classroom reorganization program is a mix of structured teaching methods that include four key items to design a classroom for ASD's students: physical environment structure, visual schedules, work system and task organization,

and visual structure (Macdonald et al., 2018). In addition to implementing a training program for teachers of severe ASD's students on functional behavior assessment methods that begin with collecting baseline data on students' behavior to know the function or reason for this behavior and lead to creating a behavior intervention plan (Steege et al., 2019).

Building the classroom environment for students with autism spectrum disorder matters in improving the quality of teaching, training, and life for the students (Tola et al., 2021). The literature review revealed that the following fundamental factors need to be taken into account when creating an ASD environment: (i) flexibility and adaptability; (ii) clarity and predictability of the environment; (iii) non-distracting; (iv) controllable; (v) sensory issues; and (vii) description of the class requirements and resources, which are primarily organized under the needs of individuals with autism spectrum disorder (Ghazali et al., 2021).

While effective classroom organization leads to enhanced independence, positive behaviors, and improved learning levels among students, inappropriate content and a design that does not match students' needs result in a variety of undesirable behaviors (Ansara, 2022). The current study is based on a set of strategies such as changing antecedent stimuli, changing the classroom environment, and identifying classroom situations that reduce the emergence of problems during the school day (Baker et al., 2004/2018).

Nowadays, in addition to effectively creating and structuring classroom contents, teachers must be equipped with a number of tools connected to great classroom management skills. When a behavioral problem in the classroom becomes a barrier to instruction, teachers who understand the principles of functional behavior

assessment (FBA) are prepared to address the behavior before it becomes so disruptive that additional resources outside the classroom are required (Young et al., 2018).

In short, the classroom reorganization program aims to create a new physical design for the classroom by changing classroom stimuli, adjusting the classroom building system, time, and components. Besides changing how to deal with students' behavioral problems by using the functional behavior assessment methodology to measure and treat behavioral problems and prepared protocol to deal with difficult behaviors among students with autism spectrum disorder.

## **1.2 Study Background**

Autism spectrum disorder (ASD) is a complex set of neurodevelopmental conditions that are defined according to the (Diagnostic and Statistical Manual of Mental Disorders, fifth edition [DSM-5], 2013) by two groups of symptoms: communication and social interaction deficits, the existence of restrictive and repetitive interest patterns, behaviors, and activities (Navarro-Pardo et al., 2021).

Behavioral problems are typical interests in students with autism spectrum disorder (ASD), have major effects on the family, and affect the ability of such individuals to live in more "normalizing" environments. Behavioral problems are among the most studied problems in developmental disabilities and are common in children and adults with autism spectrum disorder (Operto et al., 2021).

Students with autism spectrum disorder (ASD) are at risk for the development of behavioral problems because of their delays in communication, language, and social improvement. Problem behavior, a pattern of communicative expression that is

normal for young children with impairments, mostly remains in the communicative range of the child with autism because it works for him (Pastorino et al., 2021).

### **1.2.1 Scope of the Study**

#### **1.2.1(a) Special Education in the UAE**

The United Arab Emirates (UAE) is an Arabian country in the Arabian Gulf, east of Saudi Arabia, and north of Oman. (UAE) is a federation of seven emirates with a local population of around 9 million (UAE's Federal Competitiveness and Statistics Center [FCSC], 2020). The building of special education services has been undertaking important changes and movements over the past 20 years in the United Arab Emirates (UAE), from the establishment of the first law for people with special needs in 2006 to the current requirement for full inclusion in schools (Benkohila et al., 2020).

According to the United Arab Emirates Cultural Division, United Arab Emirates Cultural Division [Uaecd.org], the UAE issued a federal law (No. 29/2006) related to persons with special needs in 2006. That law guarantees the rights of people with disabilities, as it also led to the establishment of training and rehabilitation centers across the country (Karima, 2017).

In the past fifty years, the United Arab Emirates has gone through a notable progress phase in many aspects, specifically in economic development. UAE's vision is to be among the top advanced countries by 2021, as it is the year of the golden anniversary of the emirate's union in 1971. In October 2015, the executive council of Dubai announced the launch of the Dubai Inclusive Development Forum. The forum

aims to make Dubai a disability-friendly city that gives equal opportunities for persons with disabilities (Ministry of Community Development [MOCD], 2021).

To guarantee and protect the rights of persons with disabilities, the UAE has developed five strategies: social protection, delivery of public services and facilities, employment, education, health, habilitation, and rehabilitation. In addition, the model aims to create opportunities for this category of society to be more effective and present in the community (Karima, 2017).

In 2017, the name of persons with disabilities or people with special needs was amended in the UAE and replaced with the name (People of Determination) under Law (No. 13 of 2017) issued in Dubai and spread throughout the rest of the Emirates. Therefore, wherever the concept of people of determination is used, it has a meaning synonymous with people with special needs or disabilities (Gaad, 2019).

Around 20,000 People of Determination (POD), including residents and nationalities, live in Abu Dhabi, the capital of the United Arab Emirates. Among the most prevalent disabilities in the emirate are neurodevelopmental diseases such as autism spectrum disorder, intellectual disability, and particular learning problems (Department of Community Development [DOCD], 2021).

#### **1.2.1(b) Zayed Higher Organization for People of Determination**

Zayed Higher Organization for People of Determination is the scope of the study application. To support and enhance the efforts made in the field of students with special needs care, and as per the directives of the late Sheikh Zayed Bin Sultan Al Nahyan, as the Crown Prince of Abu Dhabi, Sheikh Khalifa Bin Zayed Al Nahyan, President, issued Law No. (2), dated April 19, 2004, establishing Zayed

Higher Organization for People of Determination (ZHO) in the Emirate of Abu Dhabi, as an umbrella for all humanitarian groups, social services, people of determination institutions, and any future centers established in Abu Dhabi for humanitarian goals (Al Neyadi, 2015).

ZHO is a governmental organization that enjoys full financial and administrative independence. The organization currently includes 14 centers and two sports clubs distributed across the various regions of the Emirate of Abu Dhabi: five centers in Abu Dhabi, four in Al Ain, five in Al Dhafra, the Al Ain Disabled Sports Club, and the Abu Dhabi Disabled Sports Club. ZHO also includes a care center for the blind. And among these centers are two centers dedicated exclusively to providing services to students with autism spectrum disorder, namely the Abu Dhabi Autism Center and Al Ain Autism Center (ZHO, 2021).

### **1.2.1(c) The old classroom design**

The design and construction of the classroom in the research's scope are mainly dependent on TEACCH system, which is called structured teaching. TEACCH is an abbreviation for (Treatment and Education of Autistic and Related Communication-handicapped Children), and structured teaching is the main key of TEACCH, which is related to designing the classroom and consists of: (i) the organization of the physical environment to meet the needs of the student; (ii) an expectable sequence of activities so the student knows what is coming next and when the activity will end; (iii) daily visual schedules to show students what they should be doing daily, (iv) routines with flexibility (Zeng et al., 2021).

Many informed studies on structured teaching efficacy with autism spectrum disorder suggest that the structure teaching approach for designing classrooms was

beneficial in natural communication and minimizing problematic behaviors in autism spectrum disorder' students (Hamad & Ahmed, 2020). A structured teaching approach includes the development of a program centered on the individual's skills, interests, and needs, with priorities centered on understanding autism, making necessary adaptations, and selecting intervention strategies that utilize the person's existing skills and interests (Elmeanawy, 2021).

Branigan-Pipe (2016) informed that a student's ability to learn might be damaged by any extreme or unwanted distraction; the background and surrounding environment that most of us can overlook or cope with will operate as a barrier between ASD students and the teacher, further hampering the child's development. In the survey, "92% of teachers believe classroom design has an impact on student learning." These educators believe that there is a direct relationship between classroom design and student performance, behaviors, and engagement (Block, 2018).

The old classroom design in the scope of the study is crowded, and depending on the presence of many images, tables, tips, tools, and educational schedules, it often works to increase behavioral problems, especially self-harming and disruptive behaviors such as rejection of instructions, disobedience to orders, throwing things, and escaping from the classroom (Barbara, 2020).

The relationship between the inappropriate class environment in the old classroom design and the teacher's knowledge of behavioral assessment is critical for identifying and meeting students' behavioral requirements. Inappropriate class design might limit a teacher's ability to effectively observe and assess student behavior,

potentially leading to confusion or the inaccuracy of behavioral problems (Kazak & Koyuncu, 2021).

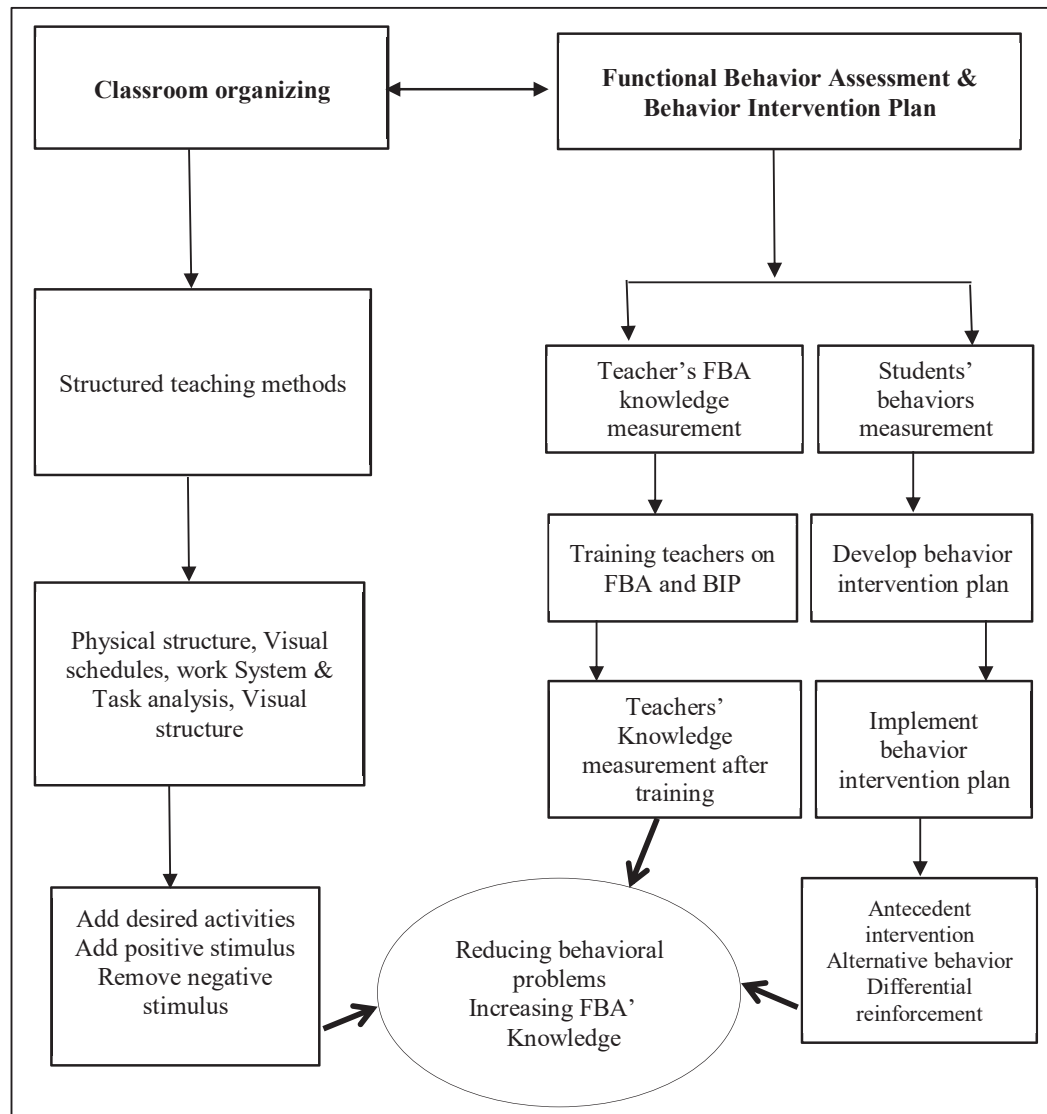
Conversely, teachers with a strong understanding of behavioral assessment methods were better equipped to identify and address behavioral challenges in varied classroom settings, regardless of design restrictions. By adapting the assessment strategies to overcome environmental limitations, they could reduce the impact of inappropriate class design (Dayal, 2021).

### **1.2.2 The Classroom Reorganization Program**

CROP is a program's package separated into two parts: the first is restructuring the physical environment and classroom components in the best and most relevant form and content for the students' situations, requirements, and issues. Certain attention should be paid to the rooms where individuals with autism spectrum disorder spend a lot of time: classrooms, where the organization of space can dramatically influence their behavior and this organization should be done according to their characteristics and individual needs (Barbara, 2020). The second part is introducing a new approach, a behavior modification program that enables the teachers of severe ASD to deal with behavioral problems and treat difficult classroom behaviors. By using functional behavior assessment to understand causes of students' behavior, design appropriate behavior intervention plans, and use effective strategies to deal with behavioral problems, it is evident that matching the function of behavioral problems to "specific treatment recommendations is a key benefit of functional analysis. This allows teachers to create treatments' strategies that are grounded in the idea of reinforcement and rely less on punishing measures (Bawazeer et al., 2020).

**Figure 1.1**

*Classroom Reorganization Program (CROP)*



The above diagram in Figure 1.1 illustrates the foundation components of the Classroom Reorganization Program; the program comprises two interconnected fundamental variables: classroom organization and functional behavior assessment. While classroom organization aims to utilize structured teaching methods to recreate the classroom environment more appropriately for students through: organizing the physical classroom environment, scheduling and illustrating materials for students, reorganizing work systems within the classroom corner, analyzing teaching and training tasks, and preparing more suitable visual classroom rules, Additionally, it involves preparing extra classroom activities that appeal to students and preventing problems by removing negative classroom stimuli and adding positive ones.

The functional behavior assessment variable is subdivided into two sequential sub-sections. To teachers, where their functional behavior assessment strategies knowledge will be measured, a training program will be initiated for them related to these strategies and train them in designing behavioral intervention plans. Their knowledge and progress will then be reassessed. As for the students, trained teachers will utilize the functional behavior assessment to measure and understand their behaviors, identify their causes, develop appropriate intervention plans, and implement the behavior intervention plan.

The program as a whole is expected, to: increase teachers' knowledge about functional behavior assessment and individual intervention plan development; decrease students' behavioral problems resulting from the use of organized teaching strategies and classroom reorganization with positive stimuli and activities; in addition to optimal use of appropriate strategies, including differential reinforcement, encouragement of appropriate alternative behaviors, and management of negative spatial stimuli within the classroom.

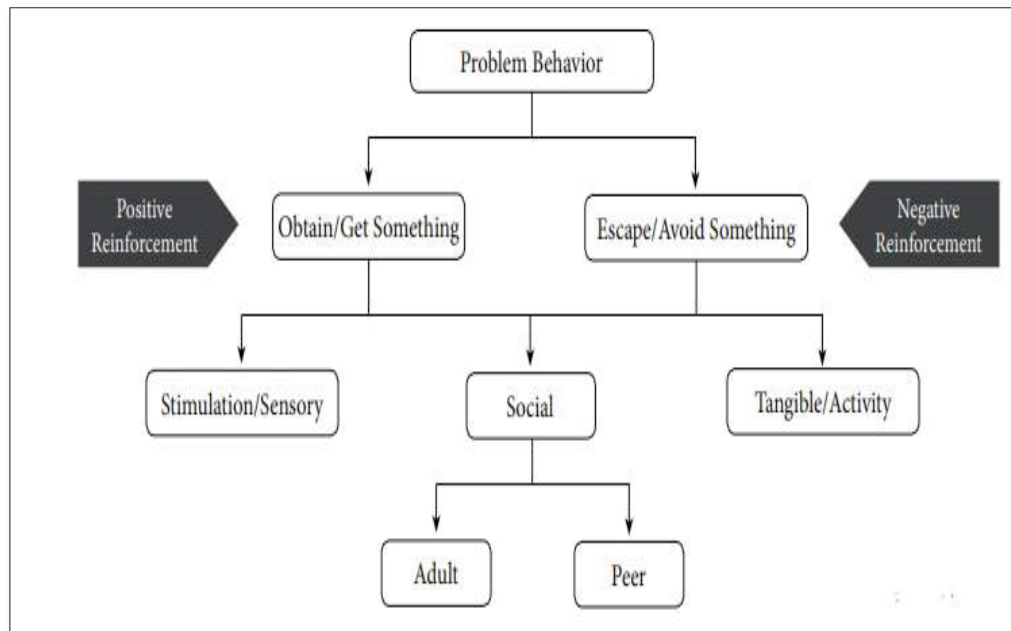
### **1.2.3 Functional Behavior Assessment**

The term Functional Behavior Assessment (FBA) comes from positive behavioral interventions and supports (PBIS). (FBA) focuses on determining the function or purpose behind a child's behavior, knowing why a student misbehaves is directly helpful to the IEP Team in developing a behavior intervention plan that will reduce or remove the inappropriate behavior (Strickland-Cohen & Simonsen, 2022).

Fisher et al. (2021) specified the process of functional behavioral assessment in seven main procedures: establishing a team, identifying the interfering behavior, collecting baseline data, developing a hypothesis statement, testing the hypothesis, developing an intervention plan based on the behavioral functional analysis results, and finally monitoring intervention effectiveness. A behavior intervention plan must use the collected data from the functional behavior assessment to develop an actual plan for improving a student's behavior, redesigning the environment, and building new skills that make the problem behavior inappropriate. BIP is not to control the student but to enable the student to be successful in his or her environment (The Office of Special Education Programs [OSEP], 2022).

Two main functions maintain the occurrence of the behavior, as described by functional behavior: (i) Positive reinforcement is a condition that happens when an object or event is given or presented after a behavior occurs, which increases the possibility that the behavior will occur again in the future. (ii) Negative reinforcement is the circumstance in which behavior has a higher chance of happening again if something (an object or an event) is avoided, escaped from, or eliminated after the behavior takes place (Saini et al., 2020).

**Figure 1.2**  
*Problem Behavior Diagram*



(Source: Saini et al., 2020).

The figure above illustrates the sources or triggers of behavioral problems in students with autism spectrum disorder, which are divided into two main categories: problems arising from the student's desire to obtain positive reinforcement such as tangible reinforcers, internal sensory reinforcements, or attention from others, besides behavioral problems resulting from negative reinforcement, which manifests in attempts to avoid or escape from unwanted activities or objects.

This can be linked to the current study, where the classroom environment in the scope of the study lacks positive behavioral reinforcement, serving as a source of undesirable negative stimuli, leading to behavioral problems among ASD's students, and effective strategies for addressing measurement and reducing behavioral problems as informed by the study by Bawazeer et al. (2019).

#### **1.2.4 Behavior intervention plan (BIP)**

Many studies have demonstrated the potential benefits of the behavior intervention plan (BIP) resulting from functional behavior assessments for improving student behavior. However, data also suggests that several classroom teachers struggle with difficulties in implementing BIP in the correct method (Robertson et al., 2020).

Persistent behavioral problems in ASD' students have the potential to make teachers unhappy, stressful, and even cause them to quit their jobs. Many special education teachers feel they are not equipped to meet every student's needs in the classroom through individualized instruction, especially with the variety inappropriate behaviors inside the classroom. As a result, they frequently choose punitive, function-based reactive interventions (Holcomb et al., 2019).

The authors observed that interventions that focused more on finding and choosing efficient techniques for behavior modification were more successful than those that employed a variety of techniques, and that happened through using the behavior intervention plan. (Senkowski et al., 2019). The Idaho Department of Education [IDOE], 2022, determines the process of a behavior intervention plan that starts with a teamwork meeting, identification of the behavioral problem, consideration of preventative strategies (antecedent strategies), replacement of inappropriate behavior and teaching positive behavior, consequences (responding to problem behavior, additional reinforcement plans), plan for progress monitoring, and crisis plan consideration.

A Behavior Intervention Plan (BIP) outlines the modifications that will be made to an educational setting in order to enhance a student's behavioral success. It also explains how the environment will be altered to prevent problem behavior, what teaching will take place to provide students with alternate behavioral options and render the problem behavior ineffective, and what consequences will be applied to reinforce appropriate behavior (Baker et al., 2004; 2018).

### **1.2.5 Behavioral Problems among autism spectrum disorder**

Behavioral Problems take place at high rates among students with autism spectrum disorder; some forms of behavioral problems consist of aggression, self-injurious behavior, stereotypical behaviors, pica, and vomiting/reflection (Gelbar, 2017). The Centre for Developmental Disability Health Victoria describes behavioral problems as "behavioral patterns of such intensity, frequency, or duration that the person's or others' physical safety is risked, or behavior that is likely to severely restrict or prevent access to public facilities" (Stock, 2018).

Approximately 94% of individuals with autism spectrum disorder engage in behavioral problems, individuals with ASD must receive effective intervention to reduce challenging behavior to decrease or prevent negative outcomes; challenging behavior may harm the individual with ASD or those around him or her (Davis & Rispoli, 2018).

The students with autism spectrum disorder, especially in level 2 and level 3, show many behavioral problems and challenges, which are not addressed by normal control methods, according Gelbar, 2017 can be classified into five major categories, as next: (i) Self-harm: Bite the hand, hit the head against the wall, slap the face, and hit the knee of the foot with the floor; (ii) Aggressive: Hit others, scratch

people, Pinches Others, and spit on them; (iii) Repetitive: Shaking the head, fluttering hands, repeatedly putting things in the mouth, waving hands; (iv) Disruptive Behaviors: Throw objects, scream, escape from class, scribble on the wall, and refuse to obey instructions; (v) Missing behaviors: Impulsivity, lack of motivation, avoids friction with others, shortness of attention, and lack of acceptance of change in routine.

### **1.2.6 Teachers' Knowledge of Functional Behavior Assessment**

Functional behavior assessment (FBA) is a process of evaluating problem behaviors to determine what causes the behavior and what variables keep the behavior going (Anderson et al., 2015). Teachers and other staff may benefit from further FBA training in order to get over some obstacles and gaps in the literature. The goal of this study of the literature is to look into the training methods for performing an FBA (Bernick, 2019).

Teachers must have the necessary' knowledge and skills to control the behavioral problems of students with autism spectrum disorder. The knowledge and abilities of the FBA process, which is a systematic process for choosing an appropriate functional-based intervention to develop an efficient behavior intervention plan, are those that educators must possess to support students with disabilities who exhibit challenging behaviors (Ibigbami et al., 2020).

Related to FBA methods in UAE, Bawazeer et al. (2019), in their study, they questioned whether there is an actual use of functional behavior assessment methods currently in the Gulf region, particularly in the United Arab Emirates, the reports indicated that despite the UAE having the largest number of specialists trained in applied behavior analysis and have (Behavior Analyst Certification Board), there is

still a severe shortage of specialists capable of using applied behavior analysis strategies and functional behavior assessment in centers compared to the number of centers and students with multiple behavioral problems on the autism spectrum, furthermore, very few centers prioritize the use of functional behavior assessment strategies.

The findings of the literature studies indicate that, when assessing the use of FBAs in the classroom, there is a significant gap between practice and research. In earlier investigations, the researchers also carried out the data analysis while carrying out the FBAs in a more controlled setting. Further research into the literature is required in the areas of teacher participation and training related to successfully and faithfully implementing FBAs (Lory et al., 2020).

### **1.3 Problem Statement**

Student behavior is influenced by the design of the classroom, the room's size, colors, materials available, tools used, and artificial light are all stimuli that the body senses and influence students' behavior in a built environment (Uherek-Bradecka, 2020). Classroom design may create a negative impact on the behavior of students with autism spectrum disorder in different areas such as occupying spaces, movement through the building, flexibility of use, dealing with furnishings and materials, safety, and security, which can also negatively influence the stress level of students (Martin, 2016).

Modifications of the educational environment and adaptations to facilitate learn are required for many students to succeed in school, this is more important for students with autism spectrum disorder (Shimokura et al., 2023). Teachers who work with students who have autism spectrum disorder, as well as special education'

teachers, have reported higher levels of emotional stress when they are exposed to behavior that they are unable to manage, it appears that behavioral issues have a negative impact on teachers' efforts to teach (Stankova et al., 2023).

Teachers of ASD suffer lack in behavior management to facing behavioral problems in the classroom, and limited knowledge to effective strategies that address students' inappropriate behaviors, and the Practical teacher involvement in understanding the function of behavior may lead to decrease of behavioral problems and engagement in academic desired classroom activities (Stafford, 2023).

The inability of the behavior modification techniques to address behavioral issues and the inappropriate design for the existing classroom show the necessity for the creation of the new class organization. The following fundamental features of the study's problem are evident: (i) The old classroom design is incompatible with students' inappropriate behavior, particularly in severe cases; (ii) There are multiple overlapping behavior problems and it is difficult to address them with the traditional behavior modification methods; (iii) It is difficult to provide students with the training and education they need to develop their skills and abilities, particularly when every student in the class typically has multiple behavior problems (Burden,2020).

#### **1.4 Research Objectives**

The purpose of this study is to develop a classroom organization program to reduce behavioral problems among students with severe autism spectrum disorder and to develop a training program to increase teachers' knowledge of functional behavior assessment, to accomplish these research objectives:

- RO1:** To analyze the effectiveness' level of the old classroom design in dealing with the behaviors of severe autism spectrum disorder' students from the teachers' perspective
- RO2:** To determine the necessary equipment and needs in the new classroom design to be appropriate for autism spectrum disorder's students from the teachers' perspective.
- RO3:** To determine the level of knowledge on functional behavior assessment among teachers of severe autism spectrum disorder.
- RO4:** To develop a new organization inside the classroom of severe autism spectrum disorder' students.
- RO5:** To develop a training program on functional behavior assessment methods for the teachers of autism spectrum disorder's students.
- RO6:** To examine the effectiveness of the classroom reorganization program in reducing behavioral problems among severe autism spectrum disorder' students.
- RO7:** To examine the level of knowledge on functional behavior assessment among teachers of severe autism spectrum disorder after the training program.

## **1.5 Research Questions**

- RQ 1:** What is the effectiveness' level of the old classroom design in reducing the behavioral problems of severe autism spectrum disorder' students from the teachers' perspective?
- RQ 2:** What are the necessary equipment and needs in the new classroom design to be appropriate for students with severe autism spectrum disorder from teachers' perspective?
- RQ 3:** What are the functional behavior assessment knowledge scores for teachers before implementing the training program?
- RQ 4:** Is there a significant difference in the behavioral problems scores among the severe autism spectrum disorder' students due to the classroom reorganization program?
- RQ 5:** Is there a difference score in the knowledge of functional behavior assessment for autism spectrum disorder's teachers after the implementation of the training program?

## **1.6 Research Hypotheses**

- H<sub>0</sub>1:** There is no significant difference in the behavioral problems scores among the severe autism spectrum disorder' students due to the classroom reorganization program. (RQ4).
- H<sub>0</sub>2:** There is no difference score in the knowledge of functional behavior assessment for autism spectrum disorder's teachers after the implementation training program (RQ5).

## 1.7 Study Significance

Behavioral problems especially disruptive behavior in the classroom, is one issue that teachers face. Teachers said that if their classes had fewer disruptive behaviors, they would spend more time teaching and teaching effectively. Students' interest in the learning process is frequently disrupted by disruptive behavior ("e.g., screaming, getting out of the seat)" (Paul, 2021). Teachers are to come up with proactive, preventative, and relatively simple classroom management strategies that cause the least amount of disruption in the classroom (Hepburn & Beamish, 2020).

The relationships between the classroom environment, student behavior, and academic engagement have been studied by researchers. A well-organized classroom allows for more positive interactions between teachers and students, lowering the likelihood of challenging behaviors occurring; furthermore, changing the classroom environment could serve as a direct intervention for ASD's students who exhibit persistent disruptive behavior (Villegas et al., 2022).

Consequences that happen after a behavior influence the occurrence of the behavior again. With our conclusions, we attempt to determine the relationship between the behavior of concern and various consequences. Teachers need to identify the consequences that maintain or reduce the possibility of a behavior, and the functional relationship is an interaction between behavior and consequences (Cariveau et al., 2019).

Zayed Higher Organization's training system for students with autism spectrum disorder is based on a unified design, and the organization of the classroom environment in a specific and strict manner for all classes, in addition to the number specified in each class in the average of 3 students per 1 teacher or 6 students per 2

teachers, with the presence of many behavioral problems for each student, may not provide the optimal and accurate opportunity to use the behavior (ZHO, 2021).

In particular, the importance of this research appears in two aspects:

**Theoretically**, the Arab region or the Gulf lacked specific studies on the effectiveness of classroom design and classroom design methods for autism spectrum disorder's students, as well as limited studies on functional behavior assessment and the impact of these variables on student behavior in the classroom. As a result, this study may be unique and contribute significantly to identifying these fields. **Practically**, this study aims to support the use of functional behavior assessment methodology within the center and the organization, primarily in the treatment of behavioral challenges, and introduce a new perspective on the fundamentals of designing and building an educational environment for a student with autism spectrum disorder, based on his needs and the severity of his disorder rather than only on general classification, in addition to providing solutions and contributions to improving positive behaviors.

## **1.8 Study Limitations**

This study is limited to the application only in one center for students with autism spectrum disorder, represented by the Al-Ain Autism Center, affiliated with Zayed Higher Organization for People of Determination (ZHO). Besides that, the study is limited to a few students with autism spectrum disorder and in one class because of the difficulty of obtaining approval to implement the program in all classes and the inability to follow all cases. In addition, it is limited to classified students with the Require very substantial support (severe), only with male students who have severe behavior problems; unlike cases of female students of the specified

age group and earlier, they are considered to be of high ability or need minor support and do not suffer from behavioral problems. Finally, the generalizations from the study should be limited to the population described and only to similar cases.

## **1.9 Definitions of terms**

### **1.9.1 Functional Behavior Assessment**

Functional behavior assessment is a process for collecting information to find out the structure and function (s) of a student's behavior (s) to improve an effective behavioral intervention plan that teaches and encourages alternative behaviors (Cheryl, 2015). The Virginia Regulations (2015) present that "functional behavioral assessment means a process to measure the primary cause or functions of a child's behavior that obstruct the teaching of the students with a disability or the learning of the child's peers.

In this study, the researcher determines the functional behavior assessment as a strategy to collect information about all the circumstances of the student's behavior (antecedents, behaviors, and consequences, times) in all places to determine the function (reason) of behavior, which leads to finding the best methods of intervention.

### **1.9.2 Behavioral Problems**

The term "behavioral problems" refers to a wide range of behaviors that may be unsafe to an individual's health, emotional distress, or exclusion from community settings (Gelbar, 2017).

In this study, the researcher defines behavioral problems as all inappropriate behaviors issued by the student inside and outside the classroom that obstruct the

student's teaching and the teaching of other students and reduce the degree of student skills' development, such as disruptive behavior, self-harm, harming others, and refusing to obey instructions.

### **1.9.3 Autism Spectrum Disorder (ASD)**

The National Institutes of Health (2018) mentioned that autism spectrum disorder is a term for a group of developmental disorders defined by Persistent problems with social communication and social interaction in various settings, Repetitive actions, and/or not wanting any change in daily routines Symptoms that begin in early childhood, normally in the first 2 years of life Symptoms that cause the human to need support in his or her daily life. The term "spectrum" refers to the broad range of symptoms, energies, and levels of impairment that individuals with ASD can have. Although ASD appears in early development, it can last throughout a person's life.

For this study, students with ASD are those with severe cases classified under category Level 3 ("requiring very substantial support"). Who suffer from many behavioral problems and need support from others in performing tasks and are between the ages of 8 and 14 years. These students receive training and treatment services in the Al Ain City/AAI Ain Autism Center according to the old design system and behavior modification programs.

### **1.9.4 The Structured Teaching**

According to Tiasari et al. (2020), structured teaching refers to a group of methods that are used to build an environment for students with autism spectrum disorder in order to work with independence inside the classroom.

For this study, the researcher determines structured teaching as a flexible system for re-building the contents of classrooms with students with severe autism spectrum disorder based on students' needs, categories, problems, and specific and unique characters.

#### **1.9.5 The Class Reorganizing Program (CROP)**

A program developed by the researcher to reduce behavioral problems and increase positive behaviors was developed by using the inter-methodology of well-environment organization and functional behavior assessment as a basis for identifying behaviors, measuring their causes, and using an effective behavior intervention plan.

This program relied mainly on organizing the classroom environment and its contents, which the researcher believes may be one of the most important causes for the occurrence of undesirable behaviors among severe ASD's students. The researcher tries to reformulate the student environment gradually under appropriate standards for them and considers their case based on structured teaching strategies. In addition to implementing training for teachers on functional behavior assessment to use the methods in preparing behavior intervention plans and helping teachers increase their knowledge of using the FBA methodology with behavioral problems.

#### **1.10 Summary**

The researcher in this chapter has introduced the background of the study, the problem statement, and the main goals of this study. The chapter also explained the conceptual framework, research objectives, questions and hypotheses, the study's significance, and its limitations. Furthermore, a special framework for this study has