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Online Training for Special Education Teachers on Supporting Behavior for Students with Intellectual Disabilities in Saudi Arabia

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A R T I C L E I N F O	A B S T R A C T

Purpose: of this study was to examine the associations between special education teachers' online 7-week training program on supporting students' behavioral skills by using the Skills and Needs Inventories – Functional Behavior Assessment and Intervention (SNI-FBAI) as pretest and posttest. **Method:** The study used a quantitative approach with *t*-test as the basic statistical measure of the difference between two group means and sufficient data collected to make an appropriate statistical analysis, which included an intervention as workshops and presentations on the principles of behavior and behavioral assessments, development, intervention, and implementation. **Results:** Findings show that current skills level was significant as teachers' pretest mean scores (12.5) were lower than their posttest mean scores (34.0), showing improvement in teachers' behavioral knowledge and skills. findings also show minimal differences in training needs from pretest mean (7.2) to posttest mean (5.0). **Recommendations:** The study suggested to include more online training for special education teachers to increase their knowledge levels and skills and enabling them to manage their classrooms and reduce their students' challenging behaviors. Also, future research should include training for general education teachers who provide inclusive education.

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1. Introduction

Training is critical to the success of many sectors to improve and support their workers to increase the quality of their outcomes, and when it comes to education it is essential to train teachers to be more engaging and effective to improve their students' learning. The education system in Saudi Arabia is developing and the quality of education including education for students with disabilities is improving. Saudi Arabia issued the *Disability Welfare Law* in 2000 ensuring and supporting people with disabilities in many aspects including the quality of education offered to them. When this law went into effect many universities initiated teacher education programs to prepare special education teachers to provide quality education to students with disabilities (Bureau of Experts at the Council of Ministers, 2000). In 2018, Saudi Arabia established the Authority of People with Disability (APD), an agency focusing on rights, empowering people with disabilities in society, and enhancing services for people with disabilities (APD, 2021).

Laws related to disabilities call for enhancing the quality of education for students with disabilities to the level offered to their peers without disabilities by providing the support needed to equip special education teachers with skills for high-quality teaching. Special education teachers need more training to increase the quality of education and ensure the effectiveness of management of behaviors (Bethune & Wood, 2013; Borgmeier et al., 2015; Hogan, Knez, & Kahng, 2015; O'Handley, Dufrene, & Wimberly, 2021). Special education teachers without training might face more challenges in teaching students with disabilities. According to Krischler and Pit-ten Cate (2019), such teachers develop negative attitudes about students with learning difficulties and challenging behavior. Thus, special education teachers need more support in the form of training them to overcome these challenges especially as more schools are providing inclusive education for students with disabilities.

The current study focused on the online training of special education teachers as these teachers needed more training in terms of supporting behaviors of students with disabilities. The method of this research was quantitative research to identify the impact of online training as pretest and posttest on those teachers who have teaching students with disabilities with at least one year of experiences. The researcher also tried in this study to train teachers by online training to enhance their knowledge and how to deal and support with students' behaviors with 8 special education teachers as a sample.

2. Literature Review

Previous studies have mentioned that online teacher training improves teachers' knowledge and skills (Borgmeier et al., 2015; Erickson, Noonan, & Mccall, 2012; Orleans, 2010). Thus, online training become beneficial for those teachers to increase their ability of supporting students' behaviors and encourage stakeholders to support these teachers who are challenging in the field and need more online training to improve their skills about behaviors. Some special education teachers have a lack of knowledge about how to support students' behaviors and how to manage their challenging behaviors. Göğebakan and Sazak (2022) mentions that the

level of knowledge of special education teachers in the field about managing behavioral and how to use intervention is lacking and limited. In other words, special education teachers need more online training to support them in the field to increase the level knowledge and skills of how to manage and support students' behaviors.

Teachers struggle to manage student behavior in school settings, and they need more training in this area. O'Handley et al. (2021) studied the effects of a teacher training program that used bug-in-the-ear (BITE) technology to provide teachers with immediate feedback in real-time to manage students' challenging behaviors. Results indicated that teachers' effective instruction delivery improved their students' compliance at high levels maintained in post-BITE training sessions. These results show the importance of training teachers in services that support students with challenging behavior. In another study, Lerman et al. (2020) used behavioral skills training to assess teachers' and trained paraprofessionals' use of discrete-trial teaching. Results indicated that behavioral skills training was an effective and socially valid method to be implemented by paraprofessionals to apply behavioral analytic procedures in special education classrooms. This result emphasizes the importance of assessing teachers' behavior management skills and providing them with more training for more effective classroom support and management of student behavior.

However, Abelha et al. (2020) noted that training by teacher appraisal might not be a highly effective method for two reasons: (a) the lack of evaluation of trainers or their levels of expertise and (b) teachers see the teacher appraisal system as unfair and useless. This implied some teachers were not willing to improve their skills by training due to the lack of professional development that trained by expertise in the field as they wasted their time or the lack of the training itself. Another study that emphasized teacher training as essential to improving education was conducted by Nguyen and Pham (2022) who claimed that universities and colleges need to reform their programs to provide high-quality teachers.

However, Verschuur, Huskens, and Didden (2021) studied the effects of training teachers of students with autism by using classroom pivotal response teaching and found no replicated impact of classroom pivotal response teaching on training educators about students' communications skills and maladaptive behavior even though the teachers were very satisfied with training. In another study, Bethune and Wood (2013) focused on training special education teachers on how to implement function-based intervention with children with severe disabilities. Results indicated a functional relation between the training and the increase of educators' implementation fidelity. Also, after training, these educators were able to generalize the skills they learned in the training to implement function-based intervention in other situations with students with disabilities. Borgmeier et al. (2015) used the functions of behavior and functional behavioral assessment to identity function-based intervention to train teachers. Results indicated a significant training effected on teachers who were able to identify function-based intervention for behaviors. Results of these studies show how training teachers may increase their ability to manage and support student behavior.

Hogan et al. (2015) used behavioral skills training to teach four teachers how to implement behavior intervention plans and results indicated that all four teachers improved their effective implementation of behavioral intervention plan after behavioral skills training. However, Flower, McKenna, and Haring (2017) claimed that teachers used universal management strategies when they were teaching rather than using and teaching specific skills to increase or decrease target behaviors. This result emphasizes the importance of training teachers during their careers to improve and be more engaged in teaching and managing student behavior. Many researchers have mentioned the importance of teacher training to increase the quality of education and insure the effective of management of behaviors (e.g., Bethune and Wood (2013); Borgmeier et al. (2015); Hogan et al. (2015); O'Handley et al. (2021)).

Training for special education teachers is vital to increase their knowledge and their skills to enable them to support students with disabilities. Erickson et al. (2012) reported that special education teachers who enrolled in online training obtained knowledge and increased their skills to apply research-based practices in their classroom. Masters et al. (2012) conducted another study resulting in the significant impact of teachers' professional development on student outcomes. Also, Orleans (2010) found that online training increased teacher knowledge about the sciences which increased the achievement scores of their students. These studies showed the effective use of online teacher training that had positive impacts on both teachers and students. However, other authors have shown that online training courses had a significant effect on teachers' knowledge levels but did not improve student outcomes (Goldenberg et al., 2014).

In contrast, de Kramer et al.'s (2012) online training for English teachers resulted in a significant impact on teachers' knowledge of vocabulary and writing practice and their students improved their reading comprehension. However, online training can not only help teachers to improve but also can assist college students to increase their knowledge. For example, Gillespie- Gillespie-Lynch et al. (2015) found that online training was a cost-effective way to improve the understanding of college students about their peers with autism on college campus. Existing studies emphasize the crucial role online teacher training plays in improving teachers' skills and the quality of their teaching (Borgmeier et al., 2015; Erickson et al., 2012; Orleans, 2010). Thus, online training become useful for those teachers to increase their ability of supporting students' behaviors and gain more skills and knowledge in behaviors to encourage stakeholders to support these teachers who are challenging in the field. Online training could also help and assist those teachers in any school who wish to improve their skills about behaviors because special education teachers need to gain knowledge about how to support students' behaviors and how to manage their challenging behaviors.

One research question guided this study: *Is there a difference in behavioral management among special education teachers before and after online training?*

3. Statement of the Problem

Teachers and community volunteers feel the need of special training in how to support and manage challenging behaviors in their classrooms. Online training could help them increase their behavioral skills levels. Several researchers have

stated that training teachers might increase the quality of their teaching and shape their skills to manage student behavior (Bethune & Wood, 2013; Borgmeier et al., 2015; Hogan et al., 2015; O'Handley et al., 2021). Other authors have asserted that online teacher training might improve teachers' knowledge and skills (Borgmeier et al., 2015; Erickson et al., 2012; Orleans, 2010).

Thus, special education teachers need more support to increase the level of knowledge and skills as they might have lack of how to manage and supports students with disabilities in the field of education. Aloufi (2020) mentioned teachers who work in inclusion classroom needs more training the field of special education especially in behavioral skills. Thus, this study recommended the training needed in the field of education either to train online or in person to be able to support and assist these teachers who in need or supporting to manage challenging behavioral.

4. Method

- ### *Research Design*

This study was designed to measure the pre- and post-training difference between two groups of special education teachers. Teachers were provided a 7-week period, with once-a-week online training program consisting of workshops and presentations about behavior management skills. This training included behavioral assessments, development, implementation, principles of behaviors, and other key components. A survey of Skills and Needs Inventories – Functional Behavior Assessment and Intervention (SNI-FBAI) (Dutt, Chen, & Nair, 2016) was also administered as a pretest before the training and a posttest 7 weeks later after the training program.

This study used a quantitative approach with *t*-test as the basic statistical measure of the difference between two group means. Sufficient data was collected to make an appropriate statistical analysis (Mertler & Reinhart, 2017).

- ### *Study Population and Sample Selection*

The sample consisted of eight in-service special education teachers eligible for the study with at least 1 year of teaching experience and bachelor's degrees. This was the most appropriate sample as these teachers were working in the field and trying to manage challenging student behavior. According to Creswell (2014), using surveys in quantitative research allows the collection of the sample population's opinions, attitudes, and behaviors. Results of studying this sample might assist policymakers and stakeholders in training teachers remotely to improve their skills to support students with their disabilities in their classrooms.

- ### *Instrumentation*

The SNI-FBAI (Dutt et al., 2016) survey was used in this study to collect data after obtaining informed consent from the respondents. The survey was originally in English, and it was translated into Arabic, which was again back-translated from Arabic to English to ensure accuracy by a bi-lingual colleague. The survey was also shared with five teachers who suggested to make a few changes in the survey questions. The first part of the survey included a demographic questionnaire about

the respondents' education level, gender, age, and years of teaching experience. The second part was the actual SNI-FBAI with 19 items, 13 items were related to current skill levels and six items on current training needs. Three items were removed after the translation of the survey as they were not pertinent to this study. The SNI-FBAI instrument also scored a high reliability when Cronbach's alpha was measured. The internal consistency value was 0.91 for current skills level, and 0.81 for current training needs (Dutt et al., 2016). The current study's reliability for current skills level was high at 0.76 and for current training needs at 0.93.

● *Data Collection Procedures and analysis*

Prior permission was taken for using the SNI-FBAI survey tool (Dutt et al., 2016) and for translating it into Arabic language. A proposal was also submitted to the Qassim University to gain the ethical approval and to collect the data from participants. After getting the approval, the samples were selected from different schools who have one year of experience at least as these teachers who participated in this study gave their online informed consent to participate. These special education teachers were also invited to collect the data during the pretest before the beginning of the online training. The data was stored to compare later with the posttest score at the end of online training. After seven weeks of training, the data was collected again from the sample participants and a t-test analysis was run by combining the test scores of both the tests.

5. Results

The results are reported in the form of descriptive statistics and *t*-test analysis of the pre- and post-test differences between the two groups of teachers. it measured the effects of the online training program on behavior management skills. Table 1 presents the demographic characteristics of the sample of the study. The sample included eight female teachers with 1-5 years of teaching experience and all eight teachers holding bachelor's degrees. They ranged in age from 21 to 30 years.

Table 1

Demographic characteristics of the study participants

Demographic item	Frequency (*N* =8)
Gender	
Female	8
Years of Work Experience	
1 – 5 years	8
Education Level	
Bachelor degree	8
Age	
21- 30 years	8

Using the sample of eight participants, a paired-sample *t*-test was conducted to compare the effects of online training in behavior management for special education teachers. There was a significant pre- and post-training difference in online training

on current skill levels (pre: *M*=12.5, *SD*=14.2; post: *M*=34.0, *SD*=3.9). There was no significant pre- and post-training difference in online training on current training needs (pre: *M*=7.2, *SD*=5.03; post: *M*=5.0, *SD*=4.8). These results suggest that the online training on current skill levels was functionally related to a significant or meaningful increase in behavior management skill levels while there was no significant pre- and post- training difference in perceived current training needs. Table 2 shows the t-test statistics.

Table 2

T-Test Statistical Analysis (N=8)

Online Training for Special Education Teacher	Pretest Means Std. Deviation		Posttest Means Std. Deviation		*p*-value
Current Skill Levels	12.5	14.2	34.0	3.9	.003
Current Training Needs	7.2	5.03	5.0	4.8	.457

In items of current skill levels, the means in posttest was high such as the items; use a recording procedure to measure behavior that counts frequency of occurrences of behavior (i.e., event recording, interval recording, duration recording) were high in the means about 3.00 in these items in posttest compared with pretest was around 1.00 or below. The other items in current skill levels were high in means as compared with pertest such as (analyze observational data (e.g., frequency, duration, time samples and graphs) to determine the function (i.e. purpose) of problem behavior, and identify potential reinforcers such as toys, leisure activities that can be used in behavioral intervention programs, and develop behavioral intervention plans based on information collected from direct observation and interviews with caregivers.

The positive/negative reinforcement based behavioral intervention strategies were used to increase the occurrence of appropriate behaviors. The reinforcement based behavioral intervention strategies to shape or teach specific functional skills such as daily life skills, academic strategies, communication etc, were also used. Restraint procedures to manage severe challenging behaviors and conduct ongoing intervention evaluation to monitor changes in behavior to show effectiveness of the treatment were also used. All these items were high in their means about 2.75 in posttest which showed the improvement in the behaviors skills that special education teachers gained after the online training, compared with pertest was 1.00.

In items of current training needs the posttest was low level of means about .50 such as the items of preference assessments to identify effective reinforcers or rewards for children. Such items could be used in intervention programs, and skill training programs to teach functional skills such as daily life skills, academic strategies, communication skills etc. The objective was to check whether these strategies helped in replacing challenging behaviors. The progress of effectiveness of interventions was monitored with children with challenging behaviors compared to means 1.25 of pretest was high in current training needs. This means after the online training the participant needs in posttest decrease to show the improvement in their behavior skills and knowledge.

Table 3

Skills and Needs Inventories – Functional Behavior Assessment and Intervention (SNI-FBAI) Form

Items		Pretest		Posttest	
		Means	SD	Means	SD
1.	Interview caregivers regarding behavioral problems using the ABC (Antecedent – Behavior- Consequence) Model.	1.25	1.282	2.50	.535
2.	Define problem behaviors in operational terms such that they can be observed and quantified.	1.25	1.165	2.75	.463
3.	Use a recording procedure to measure behavior that counts frequency of occurrences of behavior (i.e., event recording).	1.0	1.195	3.00	.000
4.	Use a recording procedure to measure behavior that counts frequency of occurrences of behaviors within specified time blocks (i.e., interval recording).	1.0	1.195	3.00	.000
5.	Use a recording procedure to measure behavior in terms of the amount of time spent in engaging in the problem behavior (i.e., duration recording).	.63	1.188	2.75	.463
6.	Analyze observational data (e.g. frequency, duration, time samples and graphs) to determine the function (i.e. purpose) of problem behavior.	.63	1.061	3.00	.000
7.	Identify potential reinforcers (such as toys, leisure activities) that can be used in behavioral intervention programs.	1.25	1.389	3.00	.000
8.	Develop behavioral intervention plans based on information collected from direct observation and interviews with caregivers.	.63	1.188	2.00	.000
9.	Use positive/negative reinforcement based behavioral intervention strategies to increase the occurrence of appropriate behaviors.	1.25	1.389	2.75	.463
10.	Use other reinforcement based behavioral intervention strategies to decrease the occurrence of inappropriate behaviors	.88	1.246	2.75	.463
11.	Use behavioral intervention strategies to shape or teach specific functional skills such as daily life skills, academic strategies, communication etc.	1.00	1.414	1.75	1.389
12.	Use restraint procedures to manage severe challenging behaviors.	.63	1.061	2.25	886
13.	Conduct ongoing intervention evaluation to monitor changes in behavior to show effectiveness of the treatment.	1.13	1.356	2.50	.926
14.	Behavioral assessments to identify functions (i.e. purpose) of challenging behaviors to develop effective intervention strategies	1.13	.991	1.00	1.069
15.	Preference Assessments to identify effective reinforcers or rewards for children that could be used in intervention programs.	1.00	.926	.50	.926
16.	Interventions for children and young persons with mild challenging behaviors (e.g., passive non-compliance, tantrums, stereotypy etc).	1.00	1.069	1.25	.886
17.	Interventions for children and young persons with severe challenging behaviors (e.g., self-injury, aggression, property destruction, elopement etc)	1.38	.916	1.2	.886
18.	Skill training programs to teach functional skills (such as daily life skills, academic. strategies, communication etc.) to replace challenging behavior	1.25	1.035	.50	.926
19.	Progress Monitoring of effectiveness of interventions with children with challenging behaviors.	1.25	.926	.50	.926

6. Discussion

This study focused on online training for in-service special education teachers on supporting and managing student behavior in classrooms. The results show that the teachers' current behavior management knowledge and skill levels increased significantly as pretest mean scores were low (12.5) compared to mean posttest scores (34.0). This

finding is similar to that of Hogan et al. (2015) who found teacher training effective and efficient in improving teachers' behavior management skills. Other studies with similar findings have indicated that online training may improve teachers' behavior management knowledge and skills (Borgmeier et al., 2015; Erickson et al., 2012; Orleans, 2010). Lerman et al.'s (2020) findings also aligned with the current study findings as the researchers mentioned the importance of providing more training to special education teachers to better enable them to support their students with challenging behaviors.

The current study results also show that these teachers perceived current training needs did not differ significantly from pre- (7.2) to post-training (5.0), showing less perceived need of training in behavior management skills. Based on the posttest results, as these special education teachers increased their behavior management knowledge and skills, they perceived less need for training in this area. This current study result aligns with results of the study conducted by Goldenberg et al. (2014) showing the significant effects of an online teacher training course on teachers' knowledge levels and training needs. Another study conducted by Borgmeier et al. (2015) found that teacher training improved teachers' ability to identify function-based interventions based on functional behavioral assessment.

In the descriptive survey of items, the participants in this study improved in how to use a recording to measure behavior with high mean in posttest compared to pretest. The participants in this study indicated how they improved after they were trained online and learned how to use reinforcement and behavioral intervention strategies compared to the pertest. These results are supported by Erickson et al. (2012) who stated that special education teachers who enrolled in online training obtained knowledge and increased their skills to apply research-based practices in their classroom. Thus, online training might increase the skills of special education teachers to gain more knowledge about behavioral skills and learn how to apply them in their classroom.

The participants in this study also responded with high mean in posttest in how to use restraint procedures to manage severe challenging behaviors and how to conduct ongoing intervention evaluation to monitor changes in behavior to show effectiveness of the treatment compared to pertest. These results are similar with Hogan et al. (2015) who used behavioral skills training to teach four teachers how to implement behavior intervention plans and results indicated that all four teachers improved their effective implementation of behavior intervention plan after behavioral skills training. Thus, emphasized the important of training for teachers to improve their skills and their knowledge to assist them to impalement it in their classroom to deal with challenging behaviours.

Moreover, participants responded a less need or training in assessment to identity effective reinforcers for children that use in intervention programs, and skill training programs to teach functional skills (such as daily life skills, academic. strategies, communication etc.) to replace challenging behaviors, and progress monitoring of effectiveness of interventions with children with challenging behaviors in posttest compared to pertest which was more need of training in challenging behaviors for those teachers. These results find similar with Lerman et al. (2020) indicated that behavioral skills training was an effective and socially valid method to be implemented by paraprofessionals to apply behavior analytic procedures in special education classrooms. Thus, these teachers showed less need of training in posttest in current training needs

items, as they gained more skills and knowledge during the online training in 7 weeks of working in training them.

7. Conclusion

Special education teachers need more professional training as they face challenging behaviors in their classrooms, and online training is one way to support these teachers in how to support and manage student behavior. The current study focused on online training for in-service special education teachers to better enable them to support and manage student behavior. The results show a significant increase in these teachers' current behavior management knowledge and skill levels as their mean pretest score was low (12.5) compared to their mean posttest score (34.0). This study also found that these teachers' current perceived training needs did not differ significantly between the pretest mean (7.2) and the posttest mean (5.0), showing less perceived need for training in behavior management skills. As these special education teachers increased their behavior management knowledge and skills, they indicated less need for training than they expressed before the training.

There are a few limitations of this study. First, the study used a very small sample size. Based on this study's results, it is recommended to have more a larger sample size to benefit more teachers with the online teacher training program. If a larger number of special education teachers attend these online training, it will increase their behavior management knowledge and skill levels to be better equipped to manage and reduce students' challenging behaviors. Second, the sample in the current study included only female participants, which in the future study might include both male and female in their training to compare gender differences. Future research should also include behavior management training for general education teachers who teach in inclusive schools, and include different categories of special education teachers such as autism's teachers and learning disabilities' teachers etc.

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