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# Influence of course content on preschool teacher candidates' classroom management strategies, professional beliefs and emotion regulation skills

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## Abstract

It is strongly needed to enhance teacher training programs via extensive course content more specifically to improve classroom management skills of teacher candidates. In the current study, we aimed to evaluate effectiveness of an elective course grounded on various strategies and vital aspects of preventive interventions about classroom management competencies, professional beliefs, and emotion regulation skills of preschool teacher candidates. The research is a quasi-experimental field study with pretest–posttest, intervention–comparison groups design including combination of qualitative and quantitative datasets. The participant group consisted of 76 females and 4 males registered in a 4-year university degree preschool teacher training program. The intervention group received training including key aspects of social and emotional intervention programs widely used in preschool settings while the comparison group received training covering inclusive education principles and relevant practices. Findings showed a significant increase in proactive approaches and positive behavioral support rates in the intervention group, while the frequency of reactive approaches was lower than the comparison group. Contrary to expectations, we could not find any influence of the content on emotion regulation skills and teaching beliefs of the intervention group. Results show clear influence of elective course content on improved skills of preschool teacher candidates about classroom management approaches.

**Keywords** Intervention · Early childhood · Teaching beliefs · Classroom management · Emotion regulation · Pre-service teachers

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## Introduction

The literature clearly points out major influence of child-teacher relationships on classroom atmosphere (Booren et al. 2012; Chen et al. 2020), even, those relationships have been identified as a critical resource in regulating different behavioral patterns of children across varying social contexts. Children usually have diverse behavior repertoire; while some children form good relationships with others without any problem, some might feel frustrated and display awkward behaviors within communication such as aggression. It might become an issue for all teachers how to manage such behaviors to create secure learning environments for all and how to respond appropriately to varying needs of children in the classroom. Universally, all children (well-adjusted or not) need guidance and support for establishing close relationships, regulating their emotions, coping with problems, and acquiring prosocial skills from early ages on (Domitrovich et al. 1999; Shure 2001; Sprick and Borgmeier 2010; Webster-Stratton et al. 2001). For this reason, it is important teachers having effective classroom management skills to promote better classroom climate, more specifically by implementing proactive strategies (Emmer and Stough 2001). It is also important for teachers to recognize their own emotion regulation skills and professional beliefs, as these are likely to influence their approaches in managing such behavioral patterns. Providing sensitive, responsive, modest, tolerant, and active participatory relationship context for young children is highly recommended (Westman and Bergmark 2014). To achieve this, teachers/practitioners and teacher candidates might need further help, they might be involved in specific trainings (Jennings et al. 2017); systematic and regular follow-up seminars and discussions would also help expanding their knowledge and skills (Webster-Stratton et al. 2011; Ritz et al. 2014). On the other hand, teachers having difficulties in handling problem behaviors of particular children for an extended period, are more likely to have negative perceptions about those children and tend to be reactive in their responses (Dobbs and Arnold 2009; Wink et al. 2021). Such a negative context might lead to shifts in teachers' attitudes and behavioral styles, the interactions between both parts might be influenced adversely by these negative experiences (Webster-Stratton et al. 2011). In fact, when children display disruptive behaviors, have difficulties in following the instructions and experience problems in regulating their emotions, they are less likely to develop positive relationships with their peers and teachers at school, and to receive positive feedback from their teachers. This fact might prevent children from focusing on any activity in the expected time frame, following the guidelines and collaborating with others, thus it reduces their chance of succeeding at school (Fox et al. 2005; Darling-Hammond et al. 2020).

The importance of communication between teacher and child is often emphasized, especially to improve educational outcomes of high-risk children and to contribute more for those children to catch-up the usual developmental pathway (Pianta 1999; Darling-Hammond and Cook-Harvey 2018). The Pyramid Model (Hemmeter et al. 2016) suggests that creating a warm and responsive classroom environment enhanced by positive relationships between children and teachers/

practitioners will often help preventing problem behaviors, so that children will progress with confidence, which, in turn, will encourage their overall adjustment (Poling et al. 2022; Darling-Hammond et al. 2020). Therefore, it is important teachers/practitioners are prepared to deal with persistent problem behaviors while providing positive behavior support for those individual children. Recognition of teachers'/practitioners' roles in promoting positive social and emotional interactions is also critical to facilitate academic enhancement in learning environments.

### **The significance of interventions for behavior management in the classroom**

Teachers can be supported to improve their knowledge and skills on preventive intervention programs to ensure successful implementation in classroom context which would better support children in their adaptation process, more specifically the ones having difficulties in managing own behaviors (Domitrovich et al. 2009, 1999; Elias and Tobias 1996; Shure 2001; Webster-Stratton and Reid 2003, 2004; Stormont et al. 2015). Preschool education programs enriched by evidence-based preventive intervention programs can contribute to prospering classroom management strategies in terms of quality and quantity, improve problem-solving skills, strengthen child-teacher relationships, and reduce negative atmosphere within the classroom (Domitrovich et al. 2014). Likewise, various studies agreed those intervention programs are effective on calming children, ensuring their self-control, regulating emotions and solving problems as well as further prosocial skills such as sharing, helping, cooperating, praising, and caring about their friends (Elias et al. 2008; Kam et al. 2004; Webster-Stratton et al. 2001; Cappella et al. 2008; Durlak et al. 2011; Morris et al. 2014). These programs were found much effective on increasing the use of positive behavior management approaches rather than negative behavior management techniques. Teachers reported that they are more inclined to praise positive behaviors and give clearer and supportive instructions considering the outcomes of child's behavior. In addition, teachers felt more secure and competent to cope with problem behaviors while implementing these programs into their daily schedule (Morris et al. 2014). The sooner such protective resources are used to improve children's competencies, the better their well-being will be. Therefore, the connection between risk and prevention should be clearly identified and recognized by professionals and practitioners, potential resources should be used in supporting classroom atmosphere, so that the skills of individual children can be activated and improved before problems arise (Webster-Stratton et al. 2011).

### **Teacher competencies in classroom management and coping with misbehavior**

As the principles of qualified preschool teacher/practitioner training programs are based on developmentally appropriate practices, it can be assumed that they already have an intervention dimension. Preschool education programs enriched via evidence-based preventive intervention programs can contribute to effective use of classroom management strategies, improvement of children's problem-solving

skills, strengthening child-teacher relationships and reducing negative atmosphere in the classroom (Domitrovich et al. 2009). On the other hand, teachers may not feel fully confident in meeting social and emotional needs of children or well-prepared in managing misbehaviours in the classroom, so they may need additional training (Blewitt et al. 2021). Teachers might feel struggled because of many reasons such as, time constraints, group size, lack of support or limited guidance from school management and/or other professionals to help in implementing successful social and emotional pedagogy. As a result, they may not feel well-prepared to manage misbehaviors in the classroom. In a study, only 34% of the teachers reported that they had adequate skills to support children in need of social, emotional, and psychological development (Reinke et al. 2011). Similarly, in numerous studies, the content of teacher training programs was not found as satisfactory as expected to ensure that teachers felt competent in terms of classroom management skills. Likewise, teacher/practitioner candidates indicated that they could not be able to improve their emotion regulation skills adequately and do not know how to manage misbehaviours in the classroom (Merret and Whelldall 1993; Martin et al. 1999; Freiberg 2002; Fox et al. 2003; Meister and Melnick 2003; Sutton et al. 2009; Allen 2010; Stormont et al. 2015). Thus, it is important to understand if teacher/practitioner candidates are adequately prepared to implement effective classroom management strategies so that they can help children acquire necessary skills to achieve positive outcomes, particularly in social and emotional developmental areas.

### **The effects of emotion regulation skills and professional beliefs on classroom management**

Research shows a strong connection between classroom management strategies implemented, expectations of teachers, teaching beliefs and emotion regulation skills (Sutton 2004; Allen 2010; Drang 2011; Egeberg et al. 2021). The support provided by teachers in meeting psychological needs of children can have an important function not only for children but also for teachers. For instance, teachers who can manage their own emotions with the right strategies can also help children regulating their emotions, organize the classroom environment accordingly, and increase the functionality of the classroom as a result (cited in Zinsser et al. 2015). Similarly, teachers' professional beliefs can also influence their emotion socialization practices (such as modeling a behavior or giving conditional response). As teaching beliefs can contribute creating positive emotional climate in the classroom, more research is needed to explore how teachers' professional beliefs might function within this (Zinsser et al. 2014). Understanding the interplay between teachers' emotion regulation skills, their professional beliefs, and the strategies they use in classroom management would be important both for teachers working in the field and also for teacher candidates. It is vital to find out the level of knowledge and training needs of teachers which might be important for developing a perspective on how teachers will be supported through their practise and how candidate teachers should be trained within the scope of current teacher training programs. Further training and support

will increase the likelihood of effective use and implementation of evidence-based programs (Reinke et al. 2011).

## **Teacher training programs, Turkish Preschool Curriculum, and classroom management**

In Turkish preschool program, revised in 2013, the spiral programming model was applied from an eclectic perspective. The program is child-centered focussing on four major developmental domains (cognitive, social-emotional, motor skills, and language) as well as self-care skills. In undergraduate programs, teacher candidates are trained to implement this program into their daily practise once they graduated with bachelor's degree as `Preschool Teacher`. The majority of teacher training programs in Turkey are centrally established by the Council of Higher Education and are built on a standard curriculum, except for a few elective courses. There is a compulsory course in the curriculum named "Classroom Management" which delivers general classroom management strategies in the content; however, the course content does not fully cover field-specific classroom management knowledge and skills, that is, preschool education in our case, which leads to some inconsistencies between different subject areas in teacher training programs and in practice (Üstüner 2004). The course content contains general classroom management models, techniques, or strategies which can be used more effectively in primary, secondary, and high school grades rather than preschool settings. Therefore, teacher candidates may not feel confident about approaches, methods, or models in preschool classroom management practice. Likewise, there are studies in the literature showing the importance of courses that improves effective classroom management skills of teacher candidates (Allen 2010; Martin et al. 1999; Drang 2011; Kaya et al. 2013). Teacher training programs particularly enriched by preventive interventions, social-emotional learning and classroom management issues will support teacher candidates while dealing with any behavioral or academic problems arise in the classroom.

Although multidimensional strategies offer promising results, more practice based and comparative research is needed to assess the effectiveness of interventions specifically in preschool teacher training area (Gregory et al. 2010, 2017). Discussion around the results will contribute to good practice to support teachers/practitioners in early years education.

## **Purpose and hypotheses of the research**

In the current study, we aimed to evaluate the effects of an elective course in preschool teacher training program called "Classroom Management and Preventive Interventions in Preschool Education" on emotion regulation skills, beliefs about teaching profession and classroom management strategies of preschool teacher candidates. With this purpose, a course model was designed covering basic features of various classroom management approaches and preventive intervention programs focussing on social and emotional developmental skills of children. Detailed

information on the content and the course design will be provided in the methodology section.

Our main inquiry was related to the extent to which the elective course design covering effective classroom management approaches and preventive intervention programs would have an impact on preschool teacher candidates' preferred classroom management strategies, emotion regulation skills and teaching beliefs. We assumed that preschool teacher candidates trained with classroom management strategies and proactive approaches would prefer to support positive behaviors in the classroom and tend to use proactive approaches including preventive intervention strategies. Additionally, the (intervention) group would prefer to use cognitive rehearsal as an emotion regulation strategy rather than suppression of expression. On the contrary, the comparison group (no specific training on classroom management approaches and preventive intervention programs) was expected to use more reactive strategies than the intervention group. We also hypothesized that preschool teacher candidates in the intervention group would likely to implement preventive and supportive strategies in the classroom. It was also an assumption that those teacher candidates would be able to manage their emotions and develop their teaching beliefs in a more optimistic way. More specifically, we expected the intervention group would be more sensitive and involved in interactions and more engaged in children's play compared to the comparison group. We believe that this study will help to uncover educational and training needs of preschool teacher candidates for the implementation of effective practices in supporting mental well-being of children.

## Methodology

### Research design

This is a pretest–posttest quasi-experimental research design with a comparison group. We worked with two similar groups (intervention and comparison) assigned to two different elective courses in preschool teacher training program. It is a mixed methodology involves quantitative and qualitative datasets in answering the research question. The intervention group was offered a content that covers basic principles of preventive intervention programs and various classroom management approaches as detailed in data collection tools section. The comparison group took another elective course with a different content called "Inclusive Education". Data collection tools were applied for both groups, at two distinct times—before and after the training/implementation period.

### Participants

In this study, participant groups (intervention and comparison) were designated based on non-random sampling method because of the nature of the quasi-experimental design. The research was conducted with preschool teacher candidates on their 4th year which is the last year to be granted for a BA degree as Preschool

Teacher (40 for the intervention group and 40 for the comparison group). The participant groups were studying at one of the higher institutions located on the west coast of Türkiye during the 2015–2016 academic year.

The participants were divided into two elective courses called "Classroom Management and Preventive Interventions in Preschool Education" and "Inclusive Education" which were open to all 4th year preschool teacher candidates. However, each course had limitations in terms of numbers of students allocated, the selection process was based on first come first served idea, therefore, 40 out of 80 students preferred to enroll in the first (intervention) course and the other 40 registered in the second (comparison) course. The participant group consisted of 76 females and four males in total. In each group, just by chance, there were two male and 38 female participants. The age range of the participants varied between 22 and 26 ( $M = 23.09$ ;  $SD = 1.80$ ).

### Data collection tools

In this study, the goal was to examine the effects of the elective course design aiming to increase preschool teacher candidates' awareness on proactive approaches. We used three instruments to make comparisons between the two groups: "Emotion Regulation Questionnaire" for measuring emotion regulation skills of teacher candidates, "Beliefs and Intentions Questionnaire" for evaluating their beliefs and intentions about teaching in preschool settings, and "[Semi-structured Problem Situation Form](#)" for understanding their potential approaches in the case of problem situations.

### "Classroom Management and Preventive Interventions in Preschool Education" course design in the intervention group

The content was prepared by two field experts who were trained in clinical and developmental psychology and specialized in various preventive intervention programs. In this elective course design, a 14-week curriculum (28 h in total) was put into practise consisting of three dimensions as detailed in the following paragraph. The overall aim was to improve understanding and skills of preschool teacher candidates in creating positive and effective classroom environments.

Regarding the first dimension, the significance of child-teacher relationships and how those relationships can be enhanced were discussed. To extend the discussion, the main principles, and the rationale behind relationship-based intervention programs, such as Banking Time (Pianta and Hamre 2001) and Circle of Security Project (Marvin et al. 2002), were introduced. The second dimension focussed on proactive approaches and widely used intervention programs to improve preschool teacher candidates' understanding in promoting alternative thinking and problem-solving skills of preschool children besides emotional awareness and emotion regulation skills of children. In the third dimension, classroom management approaches and a variety of strategies were discussed in detail to extend the students' knowledge in proactive, supportive, and reactive strategies and to help them realize how those



strategies can be applied while working with children in preschool settings. All the content were introduced and discussed via presentations, videos including samples of child-teacher interactions, and case studies.

### **"Inclusive Education" elective course design being used in the comparison group**

As mentioned before, this was 14-week course (28 h in total) and prepared by teaching staff in the faculty working in preschool education as special education specialist and educational psychologist. The content aimed to cover important mainstreaming concepts, critical mainstreaming techniques and activities, and implementing effective mainstreaming programs. Participants were also informed about how to assess children's skills and learning, to prepare a well-designed individualized education plan and to create an inclusive environment. The content aimed to support comparison group students to recognize their own roles in creating inclusive environments for young children.

### **Emotion Regulation Questionnaire (Gross and John 2003)**

This is a tool including 10 items on a 7-point Likert type scale to evaluate adults' emotional reactions and expression of emotions within the context, more specifically it is used to assess emotional intensity, variability, flexibility, and suitability of emotional representation related to the context. It identifies two main tendencies of individuals (categorized as subscales) in regulating their emotions: cognitive reappraisal and suppression of expression. In the cognitive reappraisal subscale, there are six items such as "When I want to feel less negative emotion, I change the way I'm thinking about the situation". The suppression of emotions subscale includes four items such as "I keep my emotions to myself". Turkish adaptation of the questionnaire was completed by Yurtsever (2004) and confirmed by Toran (2015). The alpha coefficient score was 0.88 for the cognitive reappraisal subscale and 0.82 for the suppression of expression subscale. In our research, this questionnaire contributed to the quantitative data we analyzed.

### **Beliefs and Intentions Questionnaire (Wilcox-Herzog and Ward 2004)**

Beliefs and Intentions Questionnaire was developed as a self-report instrument including two sections: teaching beliefs and teaching intentions. While teaching beliefs part evaluates teachers' beliefs concerning sensitive and participatory approaches, teaching intentions part reviews to which extent teachers represent these beliefs during instruction. However, in our research, we only used the teaching beliefs section of this questionnaire in the direction our main goal, therefore, only this part of the questionnaire will be detailed here. There are 17 items within this part, teachers were asked to read each item and indicate the point best reflecting their idea on a scale ranging from 1 to 5. The higher the scores the more the participation and sensitivity towards children. Teaching beliefs section includes dimensions of sensitivity, verbal, and non-verbal involvement, and play style (Wilcox-Herzog and

Ward 2004). These sub-dimensions are related to the child's developmental acquisitions and are used to examine the relationship between the child and the teacher. The items in the sensitivity subscale assess to what extent teachers are sympathetic in their communication with children and how well they are qualified, eager, and participative in these dialogues. The items in the Verbal and Non-Verbal Involvement subscales are designed to evaluate teachers' communication with children. Verbal involvement is assessed through expressions varying between never talking to children and talking to children about imaginative play. Non-verbal involvement items vary between ignoring children and communicating whole-heartedly. The items of the Play Style evaluate the participation process in the play, the style extends from being a participant in the play to improving the play. The overall scores were used as a part of quantitative data in our research.

### **Semi-structured problem situation form**

This is a form prepared by the researchers including four open-ended questions. Throughout this form, we asked how preschool teacher candidates would prefer to apply rules in their daily schedule, which strategies they would tend to use when disruptive behavior occurs in a structured activity, in what ways they would resolve problems appearing among peers, and what kind of interventions they would prefer to apply to improve prosocial skills of children such as cooperation, sharing, and collaboration. Each question contains a short story stem about a potential problem situation based on the most common conflicts/tensions teachers usually experience in preschool contexts such as "Let's assume that one of the children in your group refuses to stop playing with Legos to go to breakfast. How do you cope with this kind of situation?" This is a paper-pen task, participants were expected to explain in detail how they would cope with such situations. The content of this form was prepared based on literature review as well as professional communication of the researchers with teachers working in preschool settings. The draft version was evaluated by two staff working in the Preschool Teaching Program and revised based on their evaluations. The face validity of the form was achieved via experts' opinions. After agreeing on the form, a pilot study was implemented with two teachers working in preschool settings. The latest version was finalized by the researchers.

### **Procedure**

Initially, the fourth-year students in Preschool Teacher Training Program were informed about the courses via student registration system (which is the usual system in the faculty), and they were asked to register in one of the two elective courses (either Pre-school Classroom Management and Preventive Interventions Course or Inclusive Education Course) both of which have equal numbers of quota. As these courses were classified in the same pool of electives to complete their degree, students had to choose only one of them. The advisors informed the students about the importance of early registration, otherwise they would not be able to register for the

course if the quota were full. In that case, they would be automatically registered to the other course by the system. Therefore, the participants in the intervention and the comparison groups were assigned by the system automatically, researchers had no idea about who were involved in both groups, students did not know whether they would be involved in the intervention group or the comparison group, either. As soon as the registration period ended, all students were informed about the study, and they only took part in the research process if they volunteered. Before the courses started, researchers scheduled an interview session for each group (intervention and control) to complete pre-test phase. During the session, students were first asked to complete “Semi-Structured Problem Situation Form.” After a short break, about ten minutes, they were asked to fill the other two instruments: “Emotion Regulation Questionnaire” and “Beliefs and Intentions Questionnaire.” Participants in both groups finished the courses by 14 weeks (two hours weekly, 28 h in total). After this period, the post-test phase was implemented in two separate sessions with intervention and control groups.

### Data analysis

As two of the questionnaires, ‘Emotion Regulation Questionnaire’ and ‘Beliefs and Intentions Questionnaire,’ had subscales and total scores, the analysis of data obtained from these questionnaires was performed via repeated measures ANOVA (regarding pre-test-post-test mean scores) using the SPSS-20 program. Additionally, the qualitative data from Semi-Structured Problem Situation Form was analyzed using content analysis. Within this process, the following stages were administered: preliminary preparation, coding qualitative data, reaching out to the final categories and subcategories, interpreting the findings, and reporting the results.

For an effective content analysis, we conducted an extensive literature search for completing initial data preparation to perform further phases. More specifically, classroom management approaches reported in the current literature were examined in creating a framework. There were various views concerning the approaches being used for classroom management which also lead to diverse practices in terms of approaches or methods to support children in preschool contexts. We identified several approaches reported by different researchers under various categories based on which we drafted an extended coding list.

Participants’ responses to each question were listed without any reference to whether they were from the intervention group or the control group. We reached a total of seventy-nine pages qualitative dataset as written document which was read for three times to reveal similarities and differences between the original data and the draft coding list prepared based on literature. We removed the approaches from the draft coding list if they were not included in the dataset. We also noticed that certain subcategories, such as ignoring, time-out and providing solutions, fell into more than one main category. Therefore, the draft coding list was revised accordingly. At the final stage, we reached out four main categories, namely Supportive (consisting of eleven subcategories), Positive Behavior Management (consisting of 5 subcategories), Preventive (consisting of 5 subcategories), and Restrictive (2

subcategories) with a total of 23 subcategories. After categories and subcategories were drafted, they were all reviewed once again. To ensure the reliability, more than one researcher was involved in content analysis, moreover, definition and reorganization of the data set in collaboration with other researchers were assured. During this process, overlapping subcategories and main categories were reviewed to reach a consensus on the actual coding list. Finally, we decided to use a time-based categorisation system which means using any of the classroom management approaches either as soon as the problem appears or before the problem occurs. In other words, categories were decided based on when teacher candidates would prefer to use/apply classroom management approaches before the problem arises or just on the time problem appears. Afterwards, all categories and subcategories have been reclassified and reorganized by considering this timing rule and a new coding list was created considering the suggestions of the experts. Additionally, three master's degree students in Preschool Education who were trained in interventions examined the categories to remove overlaps between categories and subcategories. When this phase was over, 20% of the written text was selected randomly from each group (intervention/comparison, pre/post-test) to calculate the inter-encoder reliability coefficient. The inter-encoder reliability was found to be 80% (based on  $\text{Reliability} = \frac{\text{Agreement}}{\text{Agreement} + \text{Disagreement}}$  formula). Data was read carefully and repeatedly, and all the findings were checked after each reading process. These findings were then quantitatively indexed as frequencies to make comparisons between the groups.

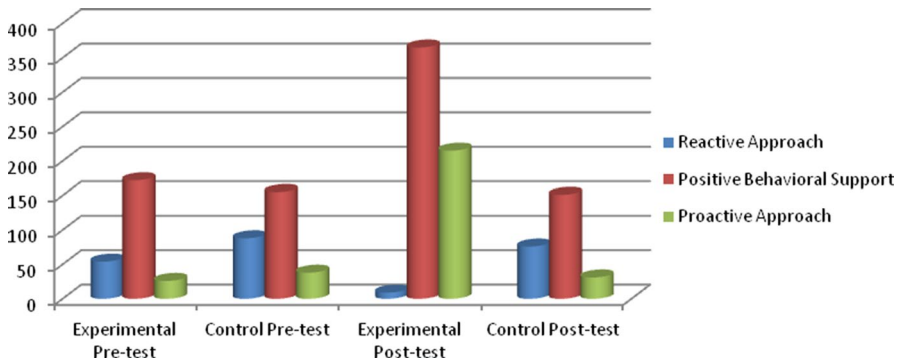
## Results

The findings of the study consist of two parts. Firstly, we will present the frequencies of each main category and subcategory (if any) by comparing the two groups (intervention and comparison) based on the responses to Semi-Structured Problem Situation Form. Secondly, the calculation of repeated measures of ANOVA regarding two questionnaires (Emotion Regulation Questionnaire and Beliefs and Intentions Questionnaire) will be reported by comparing the scores of both groups.

### **The frequencies of categories and subcategories revealed from Semi-Structured Problem Situation Form**

The frequency levels of the intervention and control groups are shown in Graph 1. In the intervention group, the frequency rates concerning the reactive approaches seem to be decreased compared to the control group. The approaches related to positive behavioral support increased in the intervention group. Moreover, proactive approaches were more frequently reported by the intervention group than the control group.

The detailed frequencies considering the two groups are presented in Table 1. In terms of reactive approaches, pretest results showed that “directing child in an instructive way” was the most frequent response for both the intervention ( $f=34$ ) and control ( $f=52$ ) groups. After the implementation, this subcategory was not



**Graph 1** Approaches reported by intervention and control groups

expressed by the intervention group, on the other hand, it was repeated by the control group ( $f=39$ ) despite of its decreased frequency. Under the main category of Positive Behavioral Support, we observed that the frequencies of all methods repeated in this category increased in the intervention group, except for “ignoring” subcategory. In the control group, following the implementation, the frequency of “calling to collaboration” has decreased remarkably. Contrary to this, the frequencies in “integrating the child to the process” has increased.

The most prominent improvement in the intervention group emerged in Proactive Approaches category. There was a significant increase in the subcategory of “using reminders” ( $f=74$ ) compared to prior findings ( $f=24$ ). While the preventive intervention programs were mentioned only once before the implementation, this number increased ( $f=101$ ) in the intervention group afterwards. Moreover, the frequency of “maintaining a decisive attitude” has increased from one to thirty-two after the implementation. In the control group, the frequency of “using reminders” which was previously expressed thirty-six times, later decreased to twenty-eight. In the control group, the subcategories such as “ignoring,” “using preventive intervention programs” and “maintaining a decisive attitude” were rarely expressed.

### **The repeated measures two-way ANOVA findings related to Emotion Regulation Questionnaire (ERQ) and Beliefs and Intentions Questionnaire (BIQ)**

We used repeated measures two-way ANOVA to make comparison between the two groups in terms of ERQ and BIQ. The descriptive statistics of ERQ are presented in Table 2. According to these results, in the cognitive reappraisal subscale, the main effect of pretest–posttest difference was not significant (Wilks’  $\lambda=0.99$ ,  $F(1,78)=0.39$ ,  $p=0.53$ ). Similarly, the interaction effect between pretest–posttest and intervention–control groups was not significant (Wilks’  $\lambda=0.99$ ,  $F(1,78)=0.45$ ,  $p=0.504$ ). In other words, the course design did not make any significant difference between the two groups in terms of cognitive reappraisal skills of preschool teacher candidates. We obtained similar findings in the suppression of expression subscale. There was no difference in terms of both main effect (Wilks’  $\lambda=0.98$ ,

**Table 1** The frequencies of subcategories expressed under main categories before and after implementation

Approach	Intervention		Comparison	
	Pre-test (f)	Post-test (f)	Pre-test (f)	Post-test (f)
<b>Reactive approach</b>				
Deprivation	10	7	14	17
Negative verbal warning	6	0	9	7
Conditioning	1	1	6	6
Directing child in an instructive way	34	0	52	39
Negative time-out	1	1	5	3
Disregard	2	0	2	4
Total	54	9	88	76
<b>Positive behavioral support</b>				
Verbal/nonverbal warning	12	23	12	11
Child finds solution	6	59	2	8
Rewarding	6	26	9	2
Giving additional time	17	22	13	15
Presenting an interesting activity	29	40	28	24
Searching the reasons	9	78	2	9
Calling to collaboration	44	40	57	34
Integrating the child to the process	34	39	20	30
Teacher offers solution	8	24	7	14
Ignoring	3	1	5	3
Positive time-out	4	13	0	1
Total	172	365	155	151
<b>Proactive approach</b>				
Using reminders	24	74	36	28
Ignoring	0	8	0	1
Preventive intervention programs	1	101	0	0
Maintaining a decisive attitude	1	32	2	2
Total	26	215	38	31

**Table 2** Averages and standard deviations of Emotion Regulation Questionnaire Subscales

Subscales of ERQ	Group	Pretest		Posttest	
		Average	S	Average	S
Reappraisal	Intervention	26.40	3.63	26.38	3.91
	Comparison	26.98	4.54	27.78	4.40
Suppression	Intervention	18.95	2.72	19.95	2.76
	Comparison	20.08	3.68	20.03	2.75

**Table 3** Averages and Standard Deviations of Beliefs and Intentions Questionnaire Subscales

	Group	Pretest		Posttest	
		Average	S	Average	S
Sensitivity	Intervention	20.90	2.18	19.28	2.08
	Comparison	21.98	2.51	21.70	2.07
Verbal/non-verbal Par	Intervention	39.85	3.17	39.48	3.00
	Comparison	40.03	2.94	39.95	3.05
Play style	Intervention	12.13	1.94	11.70	1.71
	Comparison	12.55	2.01	12.43	2.05

$F(1,78)=1.57, p=0.214$ ) and interaction effect (Wilks'  $\lambda=0.98, F(1,78)=1.42, p=0.237$ ) between the two groups. The pretest–posttest difference between the intervention and control groups was not significant in the suppression of expression subscale either.

The descriptive statistics of BIQ are presented in Table 3. Unlike the intervention group, in the sensitivity subscale of BIQ, an interesting and significant finding was attained in the favor of the comparison group (see Table 3). Accordingly, both the main effect of the sensitivity subscale (Wilks'  $\lambda=0.85, F(1,78)=13.69, p=0.000$ ) and the interaction effect with the intervention-comparison group (Wilks'  $\lambda=0.92, F(1,78)=6.91, p=0.010$ ) were found to be significant. However, the main effect (Wilks'  $\lambda=0.99, F(1,78)=0.38, p=0.540$ ) and the interaction effect (Wilks'  $\lambda=0.99, F(1,78)=0.17, p=0.683$ ) of the verbal/non-verbal participation subscale was not significant. Similarly, findings obtained from the play style subscales indicated that neither the main effect (Wilks'  $\lambda=0.98, F(1,78)=1.33, p=0.253$ ) nor the interaction effect (Wilks'  $\lambda=0.99, F(1,78)=0.39, p=0.532$ ) was meaningful. In sum, while the main effect in the sensitivity subscale is significant in terms of the comparison group, the findings in the other subscales (verbal / non-verbal participation and play style) are not significant in terms of main effect and interaction effect.

## Discussion

In the current study, we examined the effects of the course design enriched by positive classroom management approaches and interventive practices in preschool teacher training program, therefore we compared the intervention, and the comparison groups based on the approaches they use, their emotion regulation strategies and teaching beliefs. In the intervention group, preschool teacher candidates received a comprehensive training including the most basic features of the preventive intervention programs that are widely used in preschool period. For this reason, it was assumed that the intervention group would prefer to use Positive Behavioral Support and/or Proactive Classroom Management Strategies rather than Reactive and/or Restrictive Classroom Management Approaches. Within the scope of this elective course design, the critical features, and the functions of the preventive

interventions (e.g., awareness about the emotions, proper expressions of emotional reactions, generating alternative solutions, the use of techniques to prevent negative behaviors and focussing on finding ways to display positive actions) were delivered to preschool teacher candidates. At the end of the study, the frequencies of Reactive Approaches decreased significantly compared to those of in the comparison group and the frequencies of Positive Behavioral Support increased as expected. Proactive Approaches were also more frequently expressed by the intervention group. Participants in the intervention group reported that they would prefer to use Positive Behavior Support in the case of problem, such as inviting children to cooperate, engaging them in the process, and offering stimulating activities rather than Reactive Approaches such as depriving children, sending time-out, and/or warning harshly.

Positive Behavioral Support is an evidence-based approach that encourages adaptable behavioral changes of children (Dunlap et al. 2000). As it was described in the Pyramid Model, Positive Behavioral Support is a part of intensive and individualized interventions and offers an individual based approach for the child who needs further support in managing their own behaviors (Fox et al. 2003, 2009; Hemmeter et al. 2016). In this approach, the main idea is to find out the reasons behind the misbehavior displayed and to introduce alternative and appropriate ways to the child while expressing her/his needs and emotions so that s/he can achieve the same goal (Ruef et al. 1998). The underlying reason for most of the negative behaviors is that children do not know what the right behavior is. As indicated in Positive Behavioral Support, it is possible to teach children that there are ways to express themselves in appropriate and alternative ways rather than misbehavior. By this way, the incidence of misbehaviors will likely to be reduced, the adaptive and developmental skills of children will be improved, too (Ruef et al. 1998).

As findings revealed, the increased awareness in using Proactive Approaches, and the decline in Reactive Approaches clearly indicate the need for teacher training programs that cover a similar content we have used in our research. Punishment, is a Reactive Approach, could be used as a way if someone is not prepared or self-confident in finding alternative ways how to cope with problem situations (McEachern et al. 2008). However, it does not fully function in teaching necessary skills to children instead it has a short-term and adverse impact. Therefore, it is important to support children gaining adaptable behaviors through primary prevention strategies. Creating developmentally appropriate learning environments and promoting positive child-teacher relationships within this should be the core components of such programs. Instead of solving problems as soon as they arise, it would be better to take the necessary precautions to build more efficient educational environments. However, in practice, teachers might prefer to cope with challenging behaviors through immediate solutions rather than using concrete classroom management strategies (Öztürk and Gangal 2016). They might tend to use traditional methods considering their professional experience rather than addressing child profiles/needs or identifying the factors that might trigger problematic behaviors in their classrooms (Öztürk and Gangal 2016). In other words, to remove misbehaviors, teachers may be inclined to focus on individual behavior patterns in a particular way instead of investigating the reasons behind those behaviors. When we think of Positive Behavioral Support, just seeking an answer to “what, where, when and how” questions will not be



enough to achieve effective classroom management, however, answering the “why” question is important in terms of determining the underlying factors of such challenging behaviors (Ruef et al. 1998; Lavigna and Willis 2012).

In our study, 14-week training, enhanced via evidence-based interventions and effective classroom management strategies, was also expected to be impactful on emotion regulation skills and teaching beliefs of teacher candidates, specifically in the intervention group. Contrary to expectations, there was no significant difference between the intervention and the comparison groups considering emotion regulation skills and teaching beliefs. However, previous research has shown that intervention programs and training can lead to differences in emotion-related beliefs via quality interactions (Zinsser et al. 2014). In our study, the only difference found between the groups was linked to the sensitivity subscale scores in the comparison group. This was an unexpected finding in terms of our hypotheses. This might be because the comparison group realized that they were part of the study and their ideas would be evaluated, so they tended to give the desired answers. If the measures are based on self-report instruments, indeed, the findings associated with such a tendency were also reported in other studies conducted with similar intervention programs (Sahin Asi 2019). Another reason we have such a finding might be because the comparison group was already enrolled in “Inclusive Education” course which might also influence their sensitivity and raise their awareness about key issues related to interventions. Similarly, in a recent meta-analysis, the researchers reported that inclusive education training can change teachers’ professional beliefs and experience (Dignath et al. 2022). However, the findings of our study showed that a 14-week training did not have as strong impact on the emotion regulation strategies as we expected, because these strategies are mostly shaped by individual experiences and mutual relationships from early ages. Similarly, we did not find any influence of the intervention on teaching beliefs of participants.

Although the anticipated effects of self-report assessment tools on emotion regulation and teaching beliefs were not observed, our study showed that teachers candidates’ thinking styles could be improved. We believe that this training, if implemented with consistent feedback and supervision as part of a long-term process, can have a more lasting impact on the skills of the participants. In fact, research shows that if teachers implement encouraging and qualified practices, their emotional awareness will increase, by this way, they can regulate their emotions properly and express them in an adaptable manner (Zinsser et al. 2014). If the focus is on social-emotional development of children, classroom management interventions have been found to be more effective (cited in Darling-Hammond 2020). This means that practices that support effective social and emotional interactions can make the teacher a successful leader, which, in turn, will have significant contribution to teaching processes organized by the teacher (Pianta 1999).

Schools provide many opportunities for children and families as well as teaching professionals. Some schools have strong resources, infrastructures, and methods in supporting healthy development of children. However, disadvantaged schools due to socio-economic and socio-cultural factors, cannot access sufficient resources properly. Because of this, schools are more likely to fail in providing appropriate social and emotional resources as well as physical and educational support to protect

children from increased risks. In societies intensely struggling with poverty, most children need mental health services but cannot receive suitable support (Cappella et al. 2008; Durlak et al. 2011). For this reason, it is crucial to implement effective and well-designed preventive intervention programs that are supported by means of written and visual materials. In addition, teacher training and supervision activities regarding these programs should be carried out consistently and regularly. Such practices will contribute to skills development of both teachers and children (Morris et al. 2014). It is highly recommended to implement evidence based preventive intervention programs grounded on social, emotional, and cognitive learning, which are known as effective programs in reducing challenging behaviors in preschool settings (Domitrovich and Greenberg 2000; Webster-Stratton and Reid 2003; Webster-Stratton et al. 2011; Ocak and Arda 2014; Dunlop et al. 2015).

## Conclusion

Although many governments use early intervention programs in their own countries (cited in Uysal and Akman 2015), the interventions implemented, and the measures taken by each society against the risk factors are strongly related to social welfare and health systems in those countries (Kohli-Lynch et al. 2019). Serious efforts are being made to use and disseminate social-emotional learning programs. Yet, there are many factors leading to fail in reaching optimal levels of implementation regarding evidence-based intervention programs. Some schools may not know about intervention programs; therefore, the staff may not be competent in how to implement those programs effectively. Even though these programs are regarded as effective, dissemination process may come with some problems (Cappella et al. 2008; Durlak et al. 2011; Snell et al. 2014). Such programs need to be implemented regularly and continuously for successful outcomes, this may place a level of financial burden, though. However, the outcomes gained through preventive intervention programs will save much more time and money that will contribute to the country's economy (Bartik 2013; O'Connell et al. 2009). Bartik (2013) emphasizes that the qualified practices and the investments being made for these programs will increase the profit to be earned. In this regard, it is suggested to increase efforts in supporting and improving existing programs throughout early childhood education (cited in Ocak and Arda 2014). It is critical to notice protective factors rather than focusing on risk factors only (Hawkins et al. 2004). Vitto (2003) reported some of the internal and external protective factors such as caring, building close relationships, providing a positive role model, improving communication and conflict resolution skills, organizing self-control, enhancing self-sufficiency and optimism. Specifically, focusing on child-teacher relationships will have significant reflections on preventive intervention aspect and that qualified teacher-child relationships would neutralize social consequences arising from risk conditions (Pianta 1999). By strengthening supportive relationships, all developmental pathways, and competencies of children (e.g., self-regulation, emotion control, problem solving) can be promoted. Therefore, there is an emerging need for teachers who will be able to encourage positive relationships, to respond sensitively to the needs of children, to help children

in understanding their own feelings and expressing them properly, and to develop alternative thinking skills of children (Ocak 2011). It becomes even more important to train teachers in a way that considers certain standards, in line with common interests and in respect of the common strengths of intervention programs. By this way, it will be possible for teachers to take a position in reflecting the principles of these programs to effective classroom management.

## Limitations

While we obtained promising findings through this study, some limitations should also be considered. Firstly, only the preschool teacher candidates who proceeded with a single elective course were evaluated within the study. Therefore, the sample size was relatively small. Evaluating the content and assessing the results with larger participant groups (teacher candidates and/or teachers working in the field) will increase the generalizability of the findings (Reinke et al. 2011). Another limitation of this study was including teacher candidates in the comparison group who proceeded with another elective course “Inclusive Education.” Because inclusive education also includes early intervention practices and some field-specific methods and techniques, it might influence the results by increasing the sensitivity of the teacher candidates within the comparison group. This can be considered as an obstacle; therefore, the results should be interpreted accordingly.

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**Availability of data and materials** Data and materials are available for further review.

## Declarations

**Competing interests** We confirm that there are no potential competing interests about this study.

**Ethical approval** All the ethical issues were considered for this study including approvals from the school’s ethics committee and consents from the participants.

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