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The Opinions of Pre-Service Early Childhood Education Teachers about Using an Inquiry-Based Approach in an Inclusive Education Course

Abstract

In this study, the opinions of pre-service early childhood education teachers on the use of an inquiry-based approach in an Inclusive Education course were examined. The study participants consisted of 40 pre-service early childhood education teachers. During the 16 week course period, the flow of the lessons was provided by using open inquiry as one of the types of inquiry-based approaches. In the last week of the course, pre-service early childhood education teachers completed an evaluation to describe their opinions about using inquiry-based learning methods. The data from these evaluations were analyzed using content analysis. As a result, three themes, eight categories, and forty-two sub-categories were formed. The students expressed that the inquiry-based educational approach was effective in the learning and teaching process throughout the course. They reported that some of the reasons this method had a positive effect included: students having chance to ask the questions they wanted answered and discussed, coming to class having studied, participating in the lesson actively, student-centered active learning, discussing samples from real life, and having a democratic classroom environment.

Keywords: Inclusive education, inquiry-based learning, effective learning methods

Introduction

The methods to be used in inclusive education can be affected by many variables such as: a range of special requirements, different interests, needs of each child, different family structures and socio-economic levels and the conditions of schools. The developmental and behavioral needs and family expectations of each child with special needs differ. Teachers have to know various methods and techniques. They have to plan the training suitable for the situation and they have to be able to produce alternative solutions creatively. However, research shows that teachers have some difficulties with inclusion (Bakkaloglu, Yilmaz, Altun-Konez, & Yalcin, 2018; Fakolade, Adeniyi & Tella, 2017; Kale, Sigirtmac, Nur, & Abbak, 2016; Metin, 2018; Sadik & Dikici- Sigirtmac, 2016; Sigirtmac, Hos, & Abbak, 2011; Yeo, Chong, Neihart & Huan, 2016). Teacher training and increasing the teachers' qualifications are two factors that are very important for inclusive education to be performed successfully (Katz, 2015). In line with these requirements, it is necessary to review teaching and learning processes to make

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an inclusive education lesson more effective and productive.

In order to realize the meaningful development of learners, creating active learning environments in which the students structure their own learning might increase the efficacy of the learning and teaching process. Inquiry-based learning, in which active participation is ensured, provides a variety of opportunities. These include: defining what they want to know about the topic they are studying, creating research questions, collecting information and research on the topic, discussing the questions which were created and making inferences from the discussions. Making inquiries is a thinking process and it encourages the learner to construct knowledge by questioning different situations and cases (Justice, Rice, Warry, Inglis, Miller & Sammon, 2007; Savery, 2015; Tabak & Karakoc, 2004).

Through the inquiry method, the students' tendencies are to collaborate, ask questions, wonder and reach a rational conclusion. By seeing many different perspectives, they can evaluate different options and come to a decision. The students' ability to come to a decision increases, their prejudices diminish, and they are more likely to come up with new ideas through creative thinking (Fisher, 2005). Inquiry-based learning is a learning approach which emerged from a constructivist theory and which impacts students' learning and the development their own high-level thinking skills (Hmelo-Silver, Duncan & Chinn, 2007; Minner, Levy & Century, 2009). Rather than presenting a product, in this approach, the research process is especially emphasized. The students are encouraged to develop the skills of collecting existing research and then questioning and deducing interpretations from the obtained data (Lim, 2001; Savery, 2015).

Inquiry-based teaching has been the research subject in many fields at various educational levels with pre-service teachers and teachers, to explore topics such as: academic achievement (Abdi, 2014; Wolf, & Fraser, 2008), skills of scientific process (Ergul, Simsekli, Calis, Ozdilek, Gocmencelebi, & Sanli, 2011), attitude towards science (Gibson, & Chase, 2002; Pyatt, & Sims, 2012), and self-efficacy (Duran, Ballone-Duran, Haney, & Beltyukova, 2009). It has been used in social science learning in elementary school (Shih, Chuang & Hwang, 2010), science learning (Wilson, Taylor, Kowalski, & Carlson, 2010), in university students' biology courses, in laboratory contexts (Gormally, Brickman, Hallar, & Armstrong, 2009), fifth grade students' science learning process (Panasan, & Nuangchalerm, 2010), and science learning in early childhood (Roehrig, Dubosarsky, Mason, Carlson, & Murphy, 2011; Samarapungavan, Patrick, & Mantzicopoulos, 2011; Eckhoff, 2016). Furthermore, there are two studies that present data about what the teachers experienced throughout the learning and teaching processes and what kind of problems emerged during inquiry-based science teaching (Pozuelos, Gonzalez, & Canal de Leon, 2010; Sporea & Sporea, 2014). No studies were found relating to inclusive education with teachers or preservice teachers.

Inquiry-based teaching can vary according to the role-sharing between the teacher and the student. Martin-Hansen (2002) mentions four different inquiry types: structured inquiry, guided inquiry, coupled inquiry, and open or full inquiry. In the structured inquiry, the students search for a solution by using the question and process given by the teacher. In the guided inquiry, the students generally look for a solution to the question that is determined by the teacher under the guidance of the teacher. The coupled inquiry is the combination of guided inquiry and open inquiry. The open or full inquiry is a student-centered approach starting with the questions of the students. The student tries to find an answer to his question by doing research. Open inquiry requires a higher level of thinking. Having students ask questions that guide their own investigation is the key to the open inquiry (Martin-Hansen, 2002; Sadeh & Zion, 2012). In this study, open inquiry steps followed in the construction of knowledge are shown in Figure 1.

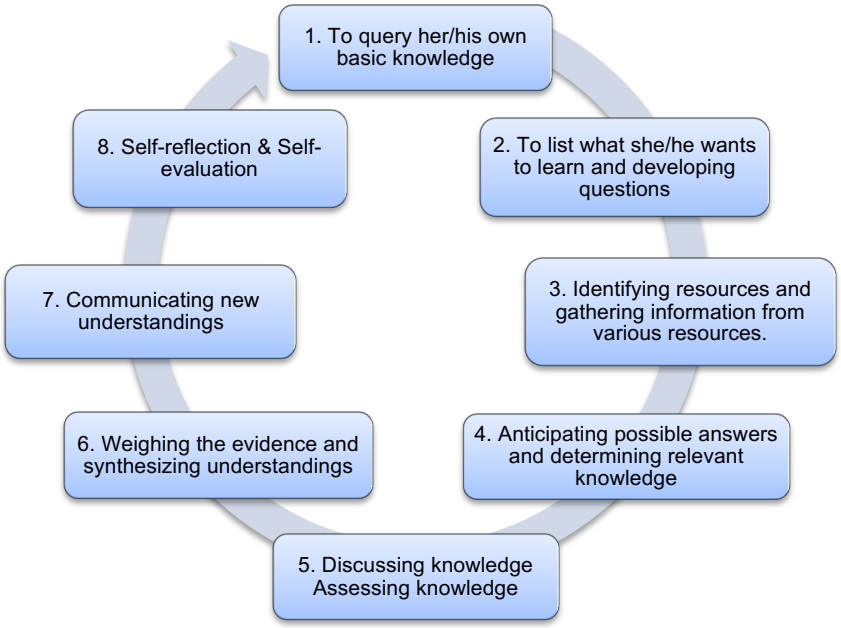


Figure 1.

Open inquiry steps followed in the construction of knowledge

This study examined open inquiry, as it focused on the inquiry in which the students searched for a solution to answer their questions under the guidance of the researcher. The researcher put an emphasis on the inquiry process, guided how the questions were formed, managed the students' inquiries during the process and created opportunities in each session for students to express their opinions. Students then reformed their interpretations through the discussion of different opinions.

This study aims to answer "what are the opinions of the pre-service early childhood education teachers about the impact of inquiry-based learning methods used in this course on inclusive education".

Method

In this study, the opinions of the pre-service teachers at the Department of Early Childhood Education about the inquiry-based course on "inclusive education" were investigated. The single case study design -one of the qualitative research designs- was used in this particular study. The single case study is carried out in order to facilitate the understanding deeply of a complex social phenomenon (Yin, 2003). It is a design which is frequently preferred in applied fields like education. It is also often used in innovations in education, evaluation programs and information policies (Merriam & Tisdell, 2015).

Study Participants

This study was conducted with 40 pre-service early childhood education teachers (senior or fourth-grade students) (12 male, 28 female) enrolled in, Inclusive Education (Inclusive Education in Early Childhood Settings) in the Department of Early Childhood Education. The ages of the participants were between 21 and 29. These students had already completed a Special Education course. The Special Education course curriculum includes basic theoretical knowledge about the types of special needs, developmental characteristics, educational needs and methods of inclusive education. The course is three hours in a week and is offered to pre-service early childhood education teachers as an elective course. The students have the right not to attend this course for maximum three weeks. Furthermore, the students who are taking this course practice a day in a week within the scope of the course of teaching practice. None of these students has working experience in the field of preschool education. The participants were informed that the evaluations which they

would write about the method used in the lesson would be used in a study and their consent was obtained.

Study Procedures

The courses were carried out in the classrooms at the Faculty of Education of the university. There are computers and projectors in the classrooms. A seating arrangement in which everybody could see each other was used in the classroom. The study procedure is shown in Table 1.

During the first week of this course, students were asked: "What should you know to be able to teach an inclusive class successfully"?. The students created a list of 22 questions. Similar questions were brought together and 14 basic questions were identified with the students. The questions were ordered in terms of the subject matter. It was decided that each question should be covered in a week and that the students should be prepared each week by researching the content of the question ahead of time. Questions to be discussed were written on the board every week. Alternative solutions were discussed under the guidance of the researcher.

An interim evaluation was given during the eighth week. Students were asked to “Write down the best thing you have learned or known about inclusive education with details.” In the interim evaluation, a code number was given to each student's written evaluation, and they were told not to write their names. Only the researcher knew which codes belonged to which students. At the end of 60 minutes, evaluations were collected and distributed back to the students in a mixed way. Each student was asked to read the assessment and score a maximum of 100 points. The same procedure was repeated three times and three scores were given on each evaluation. Five evaluations that received the highest grades were read aloud in the class. The purpose of this evaluation was to review the questions discussed up to that day and understand each other's point of view.

The inquiry-based process continued until the sixteenth week. In the sixteenth week, students were asked to evaluate their learning experience in this inquiry-based inclusion course. The course lasted for 16 weeks meeting three hours a day. It had one mid-term and one final examination.

The questions which were discussed by means of the inquiry-based method in the process of 14 weeks are presented in general terms below: Which methods do we use to evaluate the development? How and with whom is the individualized education plan formed if we have a diagnosed child in our classroom? Where and when is IEP administered? What kind of implementations can we make for different kinds of special needs in our daily activities? How should we work to collaborate with the family and to make them involve in the education? What can we do for the children who are not diagnosed but whom we suspect because of their developments or behaviours in the classroom? What methods can we use in coping with various problem behaviours and how can we use them? What methods can we use in education and training and how can we use them? What can we do to improve social interaction among peers and for peer-supported education? What can I do for classroom management? What kind of individual or group-work activities can we plan for supporting the language development? How can we help the children who come from bilingual cultures to learn languages? How can we arrange the classrooms and learning centres? How should family visits, parent-teacher meetings, seminars and conferences be planned?

The Role of the Researcher in the Research

In this study, the role of the researcher was to collect primary data, plan the process, guide, assist emotionally and be a tool of analysis (Merriam, 2013). Throughout the study, the researcher stayed involved in the learning process actively. She started and directed the process of inquiry, expanded and diversified questions according to the situation (for example: If students argue about some kind of children with special needs, remind them that there are different kinds of children with special needs.), and she observed the students’ behaviors throughout.

Table 1.
Study Procedures

Procedure	Weekly Content of the Process
First week	Identifying basic questions
2nd-8th weeks	Inquiry-based discussions of identified questions
8th week	Interim evaluation/Mid-term
9-15th weeks	Inquiry-based discussions of identified questions
16th week	Evaluation of the course process in terms of method, moderator and student/Final exam

Data Collection Tools

The 15-week process was completed with the participants. In the sixteenth week, students wrote an evaluation (in terms of method, moderator and student) about their learning experience in this inquiry-based inclusion course. It was thought that the students could not reflect their opinions objectively with all details due to the student-teacher relationship in the interview method. Therefore, the students were asked to write their evaluations without using their names. These evaluations of the students were used as documents in data collection.

Data Analysis

In order to determine the opinions about the effectiveness of the inquiry-based course, the evaluations of the students were analyzed by content analysis. The codes, sub-categories, categories, and themes were formed with an inductive perspective. The obtained categories and sub-categories were examined by an expert colleague and then, the form was finalized. The numbers of the "consensus" and "differences of opinion" of the researchers were identified and inter-code compatibility was determined with the formula of Miles & Huberman. Compliance rate between encoders was calculated as .94. The data were presented in the Tables to easily show the categories, subcategories, and frequency of these codes. Direct quotations from the participants were included so as to increase transferability. Code names were used in the text with direct quotations (S8F: Student8Female).

Results

The evaluations collected from the students relating to the course of inquiry-based inclusive education were analysed through content analysis. As a result, three themes, eight categories, and forty-two sub-categories were formed. The themes and categories are shown in Table 2.

First Theme: Related to the Method

Category 1: The Effect of the Method on Learning and the Students

The participants expressed that the method which was used supported the permanent knowledge, provided the effective learning, getting prepared to the lesson by doing researches increased the participation in the lesson, made them notice the different perspectives in the classroom by the classroom discussions, made them monitor the children with special needs more carefully during the teaching practice, made them find opportunities to use what they had learnt and provided professional contribution for them.

The highest frequency in the category of the effect of the method on learning and student is in the sub-categories of “permanence of knowledge, effective learning”. Some quotes from these and the other sub-categories are as follows:

> *Conducting research before coming to class made the knowledge more permanent. Besides, reaching the solution by discussing the possible problems and our trials to reach the knowledge by ourselves increased the efficacy of the course.S2F*

> *Permanency in learning increases especially when we research the topic and we have a discussion in the class. If there had been an instructor who explained directly and passive learners, the knowledge which we learned would not have been permanent. S12M*

> *The course was improved our skills of comprehension, understanding, and interpretation rather than just storing knowledge.S26F*

> *To me, it was a process in which I didn’t have to be stressed before the class, I came and left the class with my questions and I was always aware of what was happening.S34M*

Table 2.

Themes and Categories

Themes	Categories
1. Related to the Method	The effect of the method on Learning and the Student
	The content of the course
	Concerning the method
2. Environments and Feelings	Classroom environments
	Emotions about the course
3. Evaluation of the Course, Students and Moderator	Recommendations about the course
	Self-evaluations of the students
	Evaluations about moderator

Table 3.

Categories and Sub-Categories According to the Frequency of Related to the Method Theme

Categories	Sub-Categories	f
The Effect of the Method on Learning and the Student	The permanence of knowledge, effective learning	26
	Occupational contribution	21
	Internalizing the knowledge, Facilitating the remembering	8
	Guiding self-research, Coming to the class prepared	7
	Acquiring different perspectives	5
	Applying what they learn through practice	5
	Increasing awareness	3
The content of the Course	Being need-oriented, realistic and satisfying, students identify the content by themselves	27
	Samples from real life	18
	Practice-oriented theoretical knowledge	5
	Integration with the course of special education	5
Concerning the Method	Conversational environment	16
	Student-centered	9
	Far from monotony	9
	Discussion	8
	Brain-storming	7
	Question-answer	6
	Learning by doing	3

It was observed that the students researched and took notes before they came to class and they were willing to share their ideas during the process. The results of the content analysis showed that all of the comments about inquiry-based methods for learning about inclusive education were positive.

Category 2: Content of the Course

Determining the content of the course based on the needs of the students has become a factor that activates the inquiry and increases the interest in the course. The examples which were discussed in the lesson and searching the solutions together and thinking up alternative ideas enriched the content of the lesson. Besides, coherence was created with the course of Special Education which they had taken before. The students expressed their opinions as follows:

It was very positive for us to plan the course on the basis of our questions as we had a lot of questions about inclusive education.S4F

I really loved the content of the course. It was planned just as needed and it was taught this way. S18F

It was very good that our friends told their experiences during their practical training in the classroom, we discussed them and produced alternatives about what we could do.S8F

Our stories from our practical teaching, the sample cases you told us and the key questions you asked made us discuss and find creative solutions. Sharing the sample cases that were experienced in real life was much easier for us.S24M

It was observed during the teaching process that all of the students were willing to participate actively; they deepened the inquiry by asking questions and having ongoing discussions.

Category 3: Concerning the Method

It was seen that the students emphasized the techniques such as a discussion-based environment, student-centered, away from the monotonous, sharing ideas and brainstorming about the method used in the course.

> *The course, being student-centered and discussion-centered, increased the participation.S1F*

> *Since the techniques such as question-answer and brainstorming were used in the course, it was an applied, student-centered and active course.S29F*

> *We can see in many courses that some students fall asleep or don't listen to the teacher as the course is teacher-centered. In this course, however, participation and permanency were high as the course was student-centered and the teacher joined in the discussions actively.S38M*

The class process proceeded in an open environment in which ideas were shared mutually and everybody participated actively and regularly. No behaviors such as getting bored or demanding a break were encountered.

Second Theme: Environments and Feelings

Category 1: Classroom Environment

Under the category of Classroom Environment; students expressed that they were provided with an environment in which they participated actively, shared their ideas freely and learned from each other. It is observed that the students are happy with the classroom environment and they feel themselves comfortable. Here are some quotations from the students' responses:

> *The classroom discussion environment which we created throughout our classes made us share our wonders and questions more freely. S9F*

> *The class was very enjoyable. The conversational environment, informing, instructions and different ideas were in the forefront rather than the authority. Everybody listened, everybody spoke and all the questions in everybody's mind were answered.S7F*

> *This term, we experienced a class process in which we were happy, relaxed and amused, and which made us think over the difficulties that we can encounter. S10F*

Category 2: Emotions about the Course

The students used the expressions of willingness, being interested, enjoying, being curious, being happy and being self-confident for the feelings that this course fostered. It was seen that the students used positive feeling expressions about the lesson.

> *This class was one of the most useful ones in my university life. It was a class which did not stress the students out, which made them feel relaxed and open to learning. S24M*

> *The class was like a discussion and it was sincere. I can say that we learnt while having fun. S11F*

> *There was a free discussion environment. I wasn't bored or tense during the class.S27F*

Third Theme: Evaluations of Course, Students and Mentor

Category 1: Recommendations about the Course

For the recommendations about the course; the students expressed that this course had to be obligatory and it must be presented for two terms. They wanted to have more case studies, observations, and practice and they expressed that it could be more effective to use visuals, such as videos, more frequently

Table 4.

Categories and Sub-Categories According to the Frequency of the Environments and Feelings Theme.

Categories	Sub-Categories	f
Classroom Environment	Active participation	12
	Sharing ideas freely	10
	Learning from each other	7
Emotions about the course	Willing, Interested, Enjoyable, Curious	15
	Happy, Self-confident	8
	Relaxed, Away from stress, Sincere, Sharing	6
	Feeling valuable and lucky	4

Table 5.

Categories and Sub-Categories According to the Frequency of the Evaluations of Course, Students and Mentor Theme.

Categories	Sub-Categories	f
Recommendations about the course	The course must be obligatory and it must be given for two terms	6
	This course must be taught in this way in the following years	6
	More sample cases must be investigated	5
	Adaptation of the teaching must be discussed more	5
	Observations must be made in the environment of implementation	5
	Samples must be supported by videos	5
	More resources must be found	3
Self-evaluations of the students	I came without researching on some days	3
	I missed something when I didn't attend the class	2
Evaluations about the moderator	Expert in her field, experienced, careful about the details	12
	Created opportunities to make inquiries, guided and encouraged	11
	Energetic, willing, positive, loves the students, is a model with her attitudes and behaviors	9

The content of the course showed again and again that it must definitely be an obligatory class, not an elective one. S17F

I might recommend that having a chance to visit a pre-school and see the implementation for the students who were getting inclusive education there would be good. S32F

I believe this class taught me a lot but I couldn't see concrete examples as there weren't students who were getting inclusive education in my practical training classroom. S6F

Category 2: Self-Evaluations of the Students

The students expressed as criticism for themselves that not coming to class, not preparing and not attending the class regularly were factors in reducing the efficacy of the class.

I believe that the knowledge I got is permanent but I sometimes did not fulfil my duties. If I had come to class after doing some research, it would have been a more useful process for me. S3F

I missed some things when I didn't attend the class. Now I wish I had attended all classes without missing one. S15M

Category 3: Evaluations about the Moderator

The students evaluated the moderator as an expert, experienced, paying attention to the details. Students reported that the moderator made the students question, directed them, and was encouraging, energetic, willing, positive, and friendly. The moderator was a model for the students with her attitudes and behaviors. It was also expressed that the moderator's positive attitudes and the inviting warmth of the classroom were effective in making the interest in the class increase.

If we asked this question to you now, you would probably say that "Fortunately, we taught this lesson in this way" by seeing your contributions to us in our professional career. ☺ S31F

The attitudes and behaviors that are displayed by the lecturer were in the manner of being a model for all students. S19F

You were a teacher who not only does research and teaches yourself but also makes us do research and make inquiries. You also presented new perspectives to us.. . S30F

Discussion

The results of this study, which was conducted in order to get the opinions of the pre-service early childhood education teachers about the usage of inquiry-based education in their course of inclusive education, showed that the students expressed that inquiry-based education is rather effective in the learning and teaching process. They explained the reasons for this positive effect as; the students having a chance to ask the questions they wanted to know and discuss them, coming to the class prepared with their own research on the topics they generated, participating in the lesson actively, using a teaching method that puts the student into the center, discussing examples from real life, and having a democratic classroom environment. In addition, the students stated that more case studies should be done, more emphasis should be placed on the adaptation of the instruction, observing in a

school environment, videos should be shown and more resources should be provided. However, it can be claimed that the students' wishes and expectations are related to the content of the course and the sources of information rather than the method used in the course.

Studies on inquiry-based education mostly focused on science and technology education at different levels of education. Gormally, Brickman, Hallar, and Armstrong (2009) examined the effect of inquiry-based science education and traditional science education methods on the science literacy and self-confidence of university students. In both groups, although science literacy and self-confidence scores increased, it was found that the group receiving traditional education received higher scores at a statistically significant level. Students participating in inquiry labs often cited experiencing frustration with the process of struggling to “figure out” what they were doing without directions when they were accustomed to being provided with exact details. They also commented that the inquiry lab was “too much work,” especially when compared to other lab classes they had taken. In this study similarly, pre-service teachers stated that if they researched and read before the class, the course would be more effective.

Utilizing technology as cognitive support during the inquiry-learning process cannot only provide students with opportunities for developing high-order abilities but can also motivate them with problem-solving learning activities (Oliver, 2008; Ucar & Trundle, 2011). However, when conducting inquiry-based learning activities in conventional classrooms, it remains a dilemma to afford students the opportunties required to conduct meaningful inquiry activities (Lim, 2004), especially for social studies courses (Hwang, Chiu & Chen, 2015). Science and social sciences should be evaluated differently. In inclusive environments, the most effective educational method of changing problem behaviors or supporting developments of children with special needs sometimes can be found through trial-error because of every child's needs differences. The same method may not create the same effects on every child, and sometimes it may not be easy to overcome the problem situations. In inclusive education, there is a need to have different perspectives and alternative solutions for the children with special needs. For this reason, one can assume that studying inclusive education is more suitable to methods of discussion and inquiry.

In the process of research and inquiry-based learning, the students feel engaged by: asking questions, making explanations, observing, doing research based on their observations, becoming involved in the process personally, taking responsibility of their learning and using different ways of communicating. When instructors use this method, the students are placed in the center and they take responsibility for their learning. They become more active, increasing the efficacy of the method.

Karamustafaoglu & Celep-Havuz (2016) investigated the efficacy of inquiry-based education with sophomores at the Department of Elementary Teaching using a quasi-experimental research model. They concluded that the pre-service teachers in the experimental group must be personally involved in and must have the responsibility to learn themselves during the stages of asking questions, brainstorming, choosing the best questions, designing experiments to solve these questions, doing these experiments, and reaching a conclusion.

It was emphasized by the researchers that the activities in which research and inquiry-based approaches are supported provided the students meaningful learning in science and improved the students’ skills of research and inquiry (Tobin & Tippins, 1993). It has been thought that students' readiness is also very important in establishing meaningful learning. In this study, the participants had already attended "the course of teaching students with special needs", so they were aware of special needs, characteristics of developmental stages and inclusive teaching practices. This may have increased the efficacy of the inquiry-based teaching method. In addition to the knowledge of the students, the technique used for inquiry-based learning is also important. The open inquiry method, which is one of the inquiry-based learning techniques, was preferred in this study. Open inquiry depends on the ability of the teachers to facilitate the students in raising the appropriate, challenging questions that will guide students

during their inquiry process, and trigger student-generated investigation and learning. Thus, the participation of students in formulating an appropriate inquiry question in open inquiry is considered crucial, while the teachers scaffold and facilitate their students in every stage so that the students make choices and exercise decision-making for the different stages of inquiry. The open inquiry also depends on the students' basic knowledge. Teachers familiar with the students' basic knowledge level about the open inquiry topic will be able to direct them appropriately (Zion and Mendelovici, 2012). The students' functioning corresponds closely to the teacher's efforts to facilitate the students' scientific literacy, creativity, initiative, responsibility, and motivation (Zion & Slezak, 2005).

Kirschner, Sweller, & Clark (2006) stated that minimally guided instruction is not a correct method in the students' effective and adequate learning. To justify their perspective, they said that each student's structuring of the correct knowledge could not be followed. On the contrary, Hmelo-Silver, Duncan, and Chinn (2007) support that an inquiry method is an important tool to facilitate students' learning and mastering goals of education, such as collaboration and self-direction. They identified significant achievement in the standardized tests of the students as proof of their in-depth and meaningful learning. They concluded and emphasized that the teacher's role is very important in the inquiry method and when guidance is given properly, this method is more effective than traditional teaching methods. In this study, pre-service teachers mentioned that the mentor who directed the process created a positive and democratic environment in the classroom and everyone could express their ideas freely. They emphasized the importance of the method with student-centered and active learning.

Dobber, Zwart, Tanis & Van Oers (2017), examined 186 studies investigating different ways in which teachers can promote inquiry-based education. The studies reviewed all established that the role of the teacher is very important for the successful implementation of inquiry-based education. Nevertheless, a striking finding is that in the majority of studies the teacher was not involved in (co)developing interventions. Researchers tend to see teachers mainly as executors of interventions, and less as agents in the development of an inquiry-based approach in the classroom. For future studies, Dobber et al. (2017) advised teachers a more active role in the development of interventions, so that these are better attuned to educational practice. In addition, they concluded that the role of the teacher is complex and that it is difficult to describe a single decisive element of that role.

As a mentor in this study, I can express that there is an effective and efficient learning process in which everyone is active. Active participation of the students, discussion with each other, preparation before class, taking notes, producing original ideas and most importantly being willing to learn are all factors in increased effectiveness of the mentor and student. It was also a great advantage that the students were participating in a practicum experience at the same time. The children with special needs that they observed in their practicum were discussed as case studies and some students had the opportunity to apply what they learned. Students' attention can be easily distracted in traditional methods of teaching. In inquiry-based learning, students are given the responsibility for learning. The list of questions created by the students at the beginning of the semester includes all the content that is expected to be learned about inclusive education. The students' decision making about content increased their awareness and made the students feel responsible. If mentors think there is a lack of topics they can ask a question and lead them to a new topic, because discussions are facilitated by the mentors. Conversations that occur informally and the fact that everyone can share their ideas freely have been very effective in maintaining student attention.

Limitations

The data is limited to the evaluations of the students about the lesson which was carried out with inquiry-based method in the last week. Another limitation of the study is that there was not another observer in the process.

Conclusion and Suggestions

The findings of this qualitative study demonstrate that inquiry-based learning is an effective method in teaching inclusive education to pre-service early childhood education teachers. These pre-service early childhood education teachers had already taken a special education course and they had readiness in the fundamentals of the topic. Consequently, readiness can affect the method's efficacy. In addition, they were attending a practicum experience the same semester and they anticipated being a teacher the following year. These situations may have motivated them to learn how to ensure the inclusion of children with special needs.

Throughout the semester, the students questioned, completed research, discussed and structured the information. However; it is not enough to focus on this process only in terms of the efficacy of the lessons. This should be regarded as a sign of the ongoing nature of acquiring knowledge, as the students wanted to see more examples and to have more discussion. It is possible that they will encounter different children with various special needs in their teaching career. This will enable them to question, conduct research, and to provide alternative solutions as a teacher. They will be able to develop a broader perspective, to develop the habit of researching, to exchange ideas with their colleagues, and to produce ideas. Then, they will be able to question themselves, realize their strengths and weaknesses and to reinforce self-development. As mentioned by the students, it would have been more effective if all students had been given a chance to observe inclusive education classes, so discussions could have been more fruitful. As well as observing in classrooms, video-recordings of inclusive classes could have been a convenient way to support further discussions.

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