



## Developing A Pop-Up Storybook Based on Multicultural Education for Early Childhood Students

Khairunisa Kusumaningrum<sup>1✉</sup>, Sugeng Bayu Wahyono<sup>2</sup>

Teknologi Pembelajaran, Universitas Negeri Yogyakarta

DOI: [10.31004/obsesi.v4i1.230](https://doi.org/10.31004/obsesi.v4i1.230)

### Abstract

This research aimed to produce multicultural education-based Pop-Up storybooks for early childhood students. Through this storybook, children are given an understanding of multicultural education so that they can cope with the existence of diversity in their surroundings. In addition, this storybook educates children about how to behave towards their friends who have different customs and cultures. This development research referred to the 4-D development design procedures which include: (a) define, (b) design, (c) develop, and (d) disseminate. The product trial was carried out through 2 stages: the limited trial done with only 6 students and the main trial done with 22 students of Grade B in TK Vanda Perta Rini Kalasan. The results of the product feasibility assessment score through product validation from media expert were 3.8 (very feasible) and from material expert were 4 (very feasible). The effectiveness of this pop-up book in using multicultural education understanding for early childhood students was obtained based on the results of the pre-test score of 5.13 and post-test score of 5.95. Based on the result, it can be concluded that the pop-up book is effective to be used for introducing the understanding of multicultural education.

**Keywords:** *pop-up storybooks; multicultural education; early childhood students*

### Abstrak

Penelitian bertujuan untuk menghasilkan buku cerita *Pop-Up* berbasis pendidikan multikultural untuk anak usia dini. Lewat buku cerita ini, anak diberikan pemahaman pendidikan multikultural agar anak dapat terbiasa dengan keberagaman yang ada disekitar mereka. Selain itu, buku cerita ini mengajarkan anak bagaimana bersikap terhadap teman-teman yang memiliki adat serta budaya yang berbeda dengan mereka. Penelitian pengembangan ini mengacu pada langkah-langkah desain pengembangan 4-D yang meliputi: (a) *define*, (b) *design*, (c) *develop*, dan (d) *disseminate*. Uji coba produk dilakukan melalui 2 tahap, yakni uji coba terbatas pada 6 siswa dan Uji coba utama pada 22 anak siswa TK B Vanda Perta Rini Kalasan. Hasil skor penilaian kelayakan produk melalui validasi produk pada ahli media sebesar 3.8 (sangat layak) dan pada ahli materi sebesar 4 (sangat layak). Keefektifitasan buku *pop-up* dalam mengenakan pemahaman pendidikan multikultural untuk anak usia dini diperoleh berdasarkan hasil skor *pretest* sebesar 5.13 dan skor *posttest* sebesar 5.95. berdasarkan perbandingan tersebut, dapat disimpulkan bahwa penggunaan buku cerita *pop-up* berbasis pendidikan multikultural efektif untuk meningkatkan pemahaman anak tentang pendidikan multikultural.

**Kata Kunci:** *buku cerita pop-up; pendidikan multicultural; anak usia dini*

---

Copyright (c) 2019 Khairunisa Kusumaningrum, Sugeng Bayu Wahyono

✉ Corresponding author :

Email Address : [erinnisa7@gmail.com](mailto:erinnisa7@gmail.com) (Daerah Istimewa Yogyakarta)

Received 12 July 2019, Acepted 22 August 2019, Published 25 August 2019

## INTRODUCTION

Indonesia is a multicultural country that has a diversity of cultures, customs, beliefs and religions. Living in a multicultural country, people in Indonesia are required to be able to live side by side with the various cultural differences around them. Like the notion of multiculturalism itself, every individual has the right to be respected and be responsible to live side by side in the diverse environments and, multicultural emphasizes that diversity should be considered the same in public spaces (Inayatul, 2017).

Multicultural value can be introduced in various ways, for example through education. Multicultural education according to Bank (2013) is a movement that tries to change schools and educational institutions to be able to provide equal opportunities to students who have different social classes, genders, races, languages, and cultural groups. (Mapuranga & Bukaliya, 2014) stated that the focus of multicultural education is to introduce democratic ideals to plural societies. Multicultural education is very important to be applied at all levels of education, especially in a pluralistic society (Tarman & Tarman, 2011). Citizens come in many ethnic groups which require people to live side by side without having conflicts (Mashau, 2012).

School is the forefront in developing the concept of multicultural education, because school is an institution that instills values which are important in the development of multiculturalism. Multicultural education can help individuals gain more understanding of themselves by looking at other cultural perspectives because each culture has its own systems, values and norms, so that each person will understand their own culture and can support other cultures better. The application of multicultural education is expected to create a society that can support one another and can co-exist with all the differences. Seeing the importance of multicultural education, it is very important for multicultural education applied in all levels of education, one of which is the level of early childhood education.

Early childhood students at 0-6 years of age are in their golden age of human development in which in this stage children can easily absorb information received in their environment. This is why early childhood students is the right age students to be given a stimulus that can optimize their development. Seeing the advantages the early childhood students have, it is very great if early childhood students could be given an understanding of multicultural education. Children need to be given an understanding of the diversity that exists in their environment that will help the children to recognize their identities and those of others.

The challenge of bringing multicultural education in schools is that many teachers have not been able to apply the multicultural education curriculum appropriately and effectively although teachers should be the main role in providing an understanding of multicultural education, because teachers interact directly with children when learning in class (Reinking, 2015). Teachers must be able to link issues in the real world to learning, so that the knowledge gained in classroom can be applied to the real life of children (Chartock, 2010).

Multicultural based learning that is well designed by teachers will be able to provide direct experience to children about understanding multicultural education because class is a first community and place for the life of early childhood students, to build social interaction (van den Heuvel-Panhuizen, Elia, & Robitzsch, 2016). Multicultural education refers to cultural convergence and brings together the various needs of students in inclusion from various backgrounds. The purpose of multicultural education is transform various learning approaches, change their conceptualization and organization, so that individuals from various cultures have the same opportunity to learn. (Machmud & Alim, 2018) This is because learning with cultural references will empower students socially, emotionally, politically or intellectually (Durden, Escalante, & Blich, 2015).

TK Vanda Perta Rini Kalasan is one of Kindergarten school in Sleman regency, Yogyakarta, that implements multicultural education in their teaching-learning process. It can be seen from the fact that TK Vanda Perta Rini Kalasan accepts students from various religions, races, economic and social status. On 17<sup>th</sup> October 2018, the researcher made preliminary observations on how this school implemented multicultural education in its classes, especially in Grade B where the learning is aimed for children aged 5-6 years who were also be the subjects in this study. Based on the interview results with the class teachers, the researcher found that the teachers still had difficulties in giving an understanding of multicultural education in the classroom, for example the students still did not understand their own identities which were shown by the fact that they seemed to follow and practice different ways of praying they see around them. This condition made the parents worried because they also practiced that at home. The method used by the teacher for such problems was only a reminder with no clear explanation. This was because the right media have not yet available to be used by teachers to provide a clearer understanding of how children should behave in a multicultural environment.

Beside the preliminary observations which have been done, the researcher also dug up initial information to analyse the needs of the product to be developed. Based on the results of interviews with the class teachers, they usually used storybooks to provide learning which inculcate character values, however, the provided storybooks are more for the introduction of other characters such as disciplinary characters, responsibilities etc., while storybooks with the theme of diversity which the application of multicultural education were not available in the school. This made storybooks with multicultural education themes were very necessary so that the learning with the application of multicultural education can work optimally.

In addition to the absence of storybooks which contain multicultural themes, the types of books available in the school were also an obstacle for teachers. The available storybooks were only small regular print books without pop-ups so that in the storytelling activities students often scramble to see pictures in the delivered storybooks and this made the storytelling activities became not conducive. There was one pop-up book in the TK Vanda Perta Rini Kalasan, but the available pop-up book was not a storybook, but a book about letters and numbers. The class teacher said that students would be more interested in using dimensioned books like pop-up books than ordinary storybooks because pop-up books have elements of surprise on every page opened.

Students understanding of multicultural education can be delivered through media. Media which developed based on multicultural education learning will help teachers deliver multicultural education lessons simpler and easier to be understood by students (Saglam, 2011). One of the media that can be used is a pop-up storybook. According to (van den Heuvel-Panhuizen et al., 2016), in storybooks there are messages which can be conveyed by teachers to students, one of which can be in the form of multicultural education messages. Teachers can read a pop-up storybook that contains an understanding of multicultural education so that students will be more interested and easier to understand the messages contained in the storybook.

Storytelling is one of the most effective methods to provide an understanding of multicultural education because children will be given stories about the events which exist in their environment so that they will understand better because the events raised in the story are events experienced by children. (Moeslichatun, 2004) stated that the method of storytelling can provide a number of social, moral, and religion values. Through storytelling, students can be introduced to multicultural education because in the storybook there are values and messages contained through the story line and the characters conveyed (Turan, 2016). Therefore, it is hoped that by using pop-up storybook media based on multicultural education teachers will not only be able to attract the attention of students to listen to the stories given, but also understand the messages conveyed in storybooks so that multicultural

education messages can be conveyed properly.

Seeing the background and the problems presented above, the researcher decided to develop storybooks with pop-up style that will be developed both in terms of content and appearance. This media was expected to assist teachers in delivering multicultural education simpler so that the students will understand easier and better.

## METHOD

This study is a Research or Development (R & D) research that aimed to develop pop-up storybooks. This storybook designed for children aged 5-6 years. This media contained stories which presented in semi-three-dimensional images. The development model used in this study adopted a development model (4D): define, design, develop, and dissemination from (Thiagarajan, Semmel, & Semmel, 1974). The Define Phase, is a phase that aims to determine and define what are needed in learning (Thiagarajan et al., 1974). Among them is conducting analysis to determine the objectives and limitations of the learning material which have been used so far. The Design Phase aims to determine the learning prototype. The Develop Phase aims to create products through revisions from experts and trial data. The Disseminate Phase is the final stage of development, in which the valid and effective pop-up storybooks for introducing an understanding of multicultural education are then distributed.

There were 3 stages of trials in this study, limited trials, main trials and operational trials. The limited trial in this study was conducted in the Grade B class of TK Vanda Perta Rini Kalasan where 6 students along with the class teacher participated. The trial was conducted with the reading of the story carried out by the teacher with the aim to find out the response of students and teachers after using pop-up storybooks. The field trial was conducted in the Grade B TK Vanda Perta Rini Kalasan with a subject of 22 students. The trial was conducted with the reading of the story carried out by the teacher with the aim to find out the response of students and teachers after using pop-up storybooks. In this study, the field implementation test stage was carried out using pre-experiments with a single group design with pre-test and post-test.

In this study, there were 2 trial subjects namely limited trial subjects and the main trial subjects. The limited trial involved 6 students from Grade B of TK Vanda Perta Rini Kalasan, while the main trial, including a product operational trial, involved 22 students of Grade B TK Vanda Perta Rini Kalasan.

In this study, there were three questionnaire instruments, namely media expert, material expert, and teacher and student responses questionnaire. The media expert instrument aims to find out the feasibility of the pop-up storybook in terms of the appearance of the book, while the material expert instrument aims to find out the feasibility of the content of the material in terms of learning objectives. Beside those, the feasibility of the product was also seen from the response of the teachers and students to handle the contents of the pop-up storybooks provided. In addition to using the results of the questionnaire, the product feasibility test also considered with the results of observations of children's responses to pop-up storybooks. The observations data result of students responses were presented in the form of total score assessments with answers of "Yes and No" which were then processed using the formula percentage of agreement (Grinnell, 1998).

## RESULTS AND DISCUSSION

### Initial Product Development Results

The initial product of this research was a pop-up storybook that contains multicultural education content. The pop-up storybook was designed for teachers to introduce multicultural education to children easier. The development was carried out through three stages namely, the preliminary, planning and development stages.

Before discussing the results of initial product development, the researcher firstly conducted a needs analysis which is the basis for the development of pop-up storybook media to introduce multicultural education to early childhood students. Analysis of needs is the basis for the development of pop-up storybook media to introduce multicultural understanding of education for early childhood students. The needs analysis was carried out by interviewing the principal and class teacher of Grade B from TK Vanda Perta Rini Kalasan. In addition, the researcher did the observations of learning in the classroom and literature study related to early childhood students; especially students aged 5-6 years.

After analyzing the needs, the researcher arranged the plan. The planning stage was carried out by looking for various kinds of references related to the development of pop-up storybooks including attractive visual media references for early childhood students, pop-up books which suitable for them, pop-up books which can be used as media to introduce the understanding multicultural education for them, theories related to the character of them, and compilation of stories suitable for early childhood students. The development of pop-up storybooks aims to assist teachers in providing understanding of character education for early childhood students. This pop-up storybook is titled "Aku Sayang Semua (I Love All)", the title represents the contents of the story that tells about friendship without discrimination. This story was adapted from the events which occur around the students' life. In this story there are 6 figures which represent 6 religions in Indonesia. The 6 figures have different backgrounds and physical characters. Cultural and physical backgrounds represent the unique characteristics of Indonesian cultures.

The next step was product compilation. There were three steps in the process of making and compiling a pop-up storybook namely creation, design, and assembly. The creation phase produced the story of *Aku Sayang Semua (I Love All)* which had been divided into 8 scenes. Each scene was equipped with supporting sentences. The scenes were displayed using attractive illustrations and full colored. The second step was the design phase. The illustrations used were designed using Adobe Illustrator CC 2015. The images were then designed in accordance with the storyboard that was created. The design phase produced a pdf extended soft files, consisting of, book covers, manuals, floor pages along with supporting sentences, sky pages and illustrated pop-ups. In the pop-up storybook there was also a guidebook for the teacher that contains a user guide. After all the designs were finished, they were preceded to the printing process. The paper used for printing was Ivory 310 paper which was then glossy laminated. The use of size for the ivory paper was 310 and the glossy lamination was aimed to make the developed book more durable.

After the pop-up storybook was finished, the next step was to do a feasibility assessment which conducted by media experts and material experts. The validator provided an assessment and gave responses which were then revised. After the media revised, the validator provided a final assessment using the media feasibility assessment instrument.

**Table 1. Assessment of Media Experts**

Assessment Aspects	Validator Assessment
Color	4
Typography	3.8
Illustration	3.6
Layout	4
Display of the User Guide	3.8
Total	19.2
Average	3.8
<b>Category</b>	<b>Very Feasible</b>

Based on the results of the media expert assessment, it was concluded that the product of the pop-up storybook was very feasible to be tested with revisions as suggested. The average score of all aspects obtained was 3.8 which qualitatively falls into the Very Feasible category ( $x \geq 3.1$ ).

**Table 2. Assessment of material experts**

Assessment Aspects	Validator Assessment
Content	4
Language	4
Total	8
Average	4
Category	Very Feasible

Based on the results of the material expert assessment, it was concluded that the product of the pop-up storybook was very feasible to be tested with revisions as suggested. The average score of all aspects obtained was a perfect score with a score of 4 which qualitatively falls into the Very Feasible category ( $x \geq 3.1$ ).

## Product Trial Results

### Preliminary Trial Results

The initial trial was conducted on 2<sup>nd</sup> April 2019 in a small group of 5 students from Grade B TK Vanda Perta Rini Kalasan who shared the same characteristic; which was aged 5-6 years old. This trial was directed to see the responses of students and teachers in using pop-up storybooks.

Student gave responses after students listen to the stories read by their teacher. The five students gave responses by giving answers "Yes" or "No". Then responses from the students and teachers converted on the following four scales as a result of the conversion of students and teachers responses in the initial trial.

Based on the data analysis results of students' responses during storytelling activities using pop-up storybooks, it shows that from 8 aspects, aspects 2,3,5,6 and 8 get a response of 100%, aspects 1 and 4 get a score of 83.3% and aspect 7 gets a score of 83.3%. The average score of answering was "Yes" of 93.7% and an answer of "No" of 6.2%. Based on these data, this pop-up storybook is Worth Testing.

### Main Trial Results

After conducting a limited trial, the main trial was then carried out. The main trial was conducted on 8<sup>th</sup> April 2019 in a larger group compared to the limited trial. The trial was held in TK Vanda Perta Rini Kalasan on the 22 students of Grade B. The purpose of this study was to determine student responses about the product pop-up storybooks which were developed. Based on the results of the teacher's response to the main test, it was concluded that the pop-up storybook product was very feasible to use. The average score for all aspects obtained was 3.95 which qualitatively belong to the category of Very Eligible ( $x \geq 3.1$ ).

Based on the results of data analysis of students' responses during the storytelling activities in the main test using a pop-up storybook shows that out of the 8 aspects, the aspect 4 got a score of 100%, aspects 1, 2 and 7 received a score of 86.3% and aspects 3, 5 and 6 received a score of 90.9% and aspect 8 got a score of 95.4%. The average score which answered "Yes" was 90.8% and the answer "No" was 9.1% Based on these data, this pop-up storybook is Eligible to be used.

### Operational Trial Results

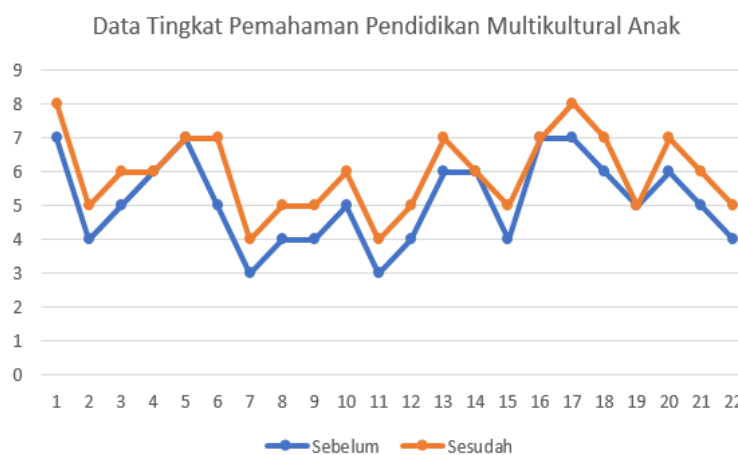
After the pop-up storybook was deemed to be feasible and worth to be used for learning, the next step was to test the effectiveness of the pop-up storybook in an operational trial. The operational trial had a goal to see the effect of using pop-up storybooks on increasing students' understanding of multicultural education. In this study, an increase in understanding of multicultural education was seen through observation. Observations were made to see the behavior of students before and after using pop-up storybooks. Observations were conducted in December 2018 - March 2019.

Data on students' understanding of multicultural education were obtained from pre-test and post-test data. Pre-test data were obtained before using the pop-up storybook while the post-test data were obtained after using the pop-up storybook. The results of the pre-test and post-test in the form of the average value, range, standard deviation, variance, maximum, minimum and total data are shown in the following table.

**Table 3. Pre-test and Post-test Data Description From The Trial Results of Multicultural Education in Early Childhood Students**

Statistic	Pretest	Posttest
N	22	22
Range	4.00	4.00
Maximun	7.00	8.00
Minimun	3.00	4.00
Sum	113.00	131.00
Mean	5.13	5.95
Std.Error of Mean	.27363	.25034
Std.Deviation	1.28343	1.17422
Variance	1.647	1.379

Based on Table 3 above, the descriptive analysis result of understanding multicultural education with pop-up storybooks has increased. This increase number can be seen in the diagram as follows:



**Diagram 4. Comparison of Students' Understanding Scores on Before and After They Use a Pop-Up Storybook.**

Based on the diagram above, it appears that students' understanding of multicultural education has increased. This increase number was seen based on observations before and after students used pop-up storybooks.

### Discussion

This development research examined how the media feasibility of pop-up stories was designed to introduce an understanding of multicultural education in early childhood. Early

childhood students in this study were focused on students aged 5-6 years. This developmental research also examined whether pop-up storybooks can influence students' understanding of multicultural education or not.

This pop-up storybook was developed by using the 4D development model (Four D) which included define, design, develop and dissemination. The development of a pop-up storybook began with a needs analysis, content, design, and assembly.

Based on the validation, the pop-up storybook was declared very feasible with a score of 3.8. It was categorized as very feasible with consideration in several aspects, such as aspects of color, typography, illustrations, and layouts. The color aspect received a score of 4, typography aspect received a score of 3.8, illustration aspect received a score of 3.6 and layout aspect received a score of 4.

Product feasibility tested by material experts which includes content and language assessment. Based on the assessment of the media assessed by material expert, the pop-up storybook result an average perfect score of 4 with a very feasible category. The content and language aspects included the themes, characters, plot, and style of language used in pop-up storybooks.

It could be concluded that the average score obtained from the assessment by material experts and media experts through the validation stage could be classified into the "Very Feasible" category which then could be interpreted that the pop-up storybooks could be tested on the field.

After going through the product feasibility test, it was then tested through limited trials to 6 kindergarten students of B Class and 1 teacher of TK Vanda Perta Rini Kalasan. From the limited trial, it was informed that the response of students and teachers after using the pop-up storybook was "very good" which meant it could be continued at the main trial stage. The main trial was conducted at TK Vanda Perta Rini Kalasan with 22 Grade B students and 2 teachers who gave excellent responses to the pop-up storybook.

After the pop-up storybook declared as feasible, the next step was to conduct an operational trial. Operational trial would give answers to the research questions about whether the learning media pop-up storybooks are effective in being able to introduce multicultural education understanding in early childhood students or not. This was proved by the increasing number of students' understanding about multicultural education after being given treatment in the form of storytelling activities using pop-up storybooks. Based on the pre-test scores obtained, the scores were not very good but after the treatment using a pop-up storybook an increase number in students' understanding was shown and presented in the post-test score. This has proven that the pop-up storybooks are effective in increasing students' understanding of multicultural education.

## CONCLUSION

Based on the results of research and development of pop-up storybook product, it can be concluded that, 1. Students' understanding of multicultural education in TK Vanda Perta Rini Kalasan has not been well developed. This was proved by the fact that there were still students who follow the way their friends with different beliefs pray. The problem experienced by teachers was that it was still difficult to educate students to understand about how they should behave in a multicultural environment due to the absence of media, especially storybooks which can facilitate teachers in delivering multicultural education for students to understand. From that, it was necessary to develop storybooks with multicultural educational content which presented pop-up displays which can engage students' attention. The pop-up storybook product was developed in accordance with the characteristics of students aged 5-6 years which include aspects, colors, illustrations, layout, content and language. The book was designed with full colored so that students can be interested, the choice of language was adjusted to fit the characteristics of the students so that they are able to understand it, and the choice of content was adjusted to the learning objectives and



appropriate of early childhood students. Based on the assessment of material experts, media experts, as well as the responses of students and teachers, the pop-up storybook was declared to be feasible and contain very good criteria.

The developed pop-up book has been proven as effective in increasing understanding of multicultural education in 5-6 years old students based on the results of the pre-test and post-test which have been conducted.

## ACKNOWLEDGMENT

Many gratitude to Allah SWT who has given easiness in the making process of this paper. The researcher also would say many thanks to the headmaster and teachers in TK Vanda Perta Rini for helping and facilitating the research process. In addition, I thank the editor team of Obsesi journal for enabling this journal to be ready to publish.

## REFERENCES

- Chartock, R. K. (2010). *Strategies and Lessons for Culturally Responsive Teaching: A Primer for K-12 Teachers*. Pearson; 1 edition (October 1, 2009).
- Durden, T. R., Escalante, E., & Blich, K. (2015). Start with Us! Culturally Relevant Pedagogy in the Preschool Classroom. *Early Childhood Education Journal*, 43(3), 223–232. <https://doi.org/10.1007/s10643-014-0651-8>
- Inayatul, L. (2017). *Pendidikan Multikultural pada Anak Usia Dini di Taman Kanak-Kanak Sekolah Mutiara Ibu Kabupaten Purworejo*. Universitas Negeri Yogyakarta.
- Machmud, H., & Alim, N. (2018). Multicultural Learning Model of PAUD in Coastal Areas. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 2(2), 170. <https://doi.org/10.31004/obsesi.v2i2.74>
- Mapuranga, B., & Bukaliya, R. (2014). Multiculturalism in schools: An appreciation from the teachers' perspective of multicultural education in the zimbabwean school system. *International Journal of Humanities Social Science and Education (IJHSSE)*, 1(2), 30–40. Retrieved from [www.arcjournals.org](http://www.arcjournals.org)
- Mashau, T. S. (2012). Multi-Cultural Education: Is Education Playing A Role In Acculturating Different Cultures In South Africa? Parliamentary Promulgated Laws Since 1994. *American International Journal of Contemporary Research*, 2(6), 57–65.
- Moeslichatun. (2004). *Metode pengajarann di taman kanan-kanan*. Jakarta: JP press grup.
- Reinking, A. K. (2015). Investigating preschool teachers' implementation of multicultural curriculum through teacher evaluation approaches. *ProQuest Dissertations and Theses*, 144. Retrieved from [http://flagship.luc.edu/login?url=http://search.proquest.com/docview/1759630486?accountid=12163%5Cnhttp://loyola-primo.hosted.exlibrisgroup.com/openurl/01LUC/01LUC\\_SERVICES?genre=dissertations+%26+theses&issn=&title=Investigating+preschool+teachers'+](http://flagship.luc.edu/login?url=http://search.proquest.com/docview/1759630486?accountid=12163%5Cnhttp://loyola-primo.hosted.exlibrisgroup.com/openurl/01LUC/01LUC_SERVICES?genre=dissertations+%26+theses&issn=&title=Investigating+preschool+teachers'+)
- Saglam, H. I. (2011). An investigation on teaching materials used in social studies. *Turkish Online Journal of Educational Technology*, 10(1), 36–44.
- Tarman, I., & Tarman, B. (2011). Developing Effective Multicultural Practices: A Case Study of Exploring a Teacher's Understanding and Practices. *The Journal of International Social Research*, 4(17).
- Thiagarajan, S., Semmel, D. ., & Semmel, M. . (1974). *Instructional development for training teachers of expectional children*. Minneapolis, Minnesota. University of Minnesota.
- van den Heuvel-Panhuizen, M., Elia, I., & Robitzsch, A. (2016). Effects of reading picture books on kindergartners' mathematics performance. *Educational Psychology*, 36(2), 323–346. <https://doi.org/10.1080/01443410.2014.963029>