

Comparative Study of Production Criteria of Tactile Books from the Viewpoint of Production Specialists

Marjan Nikbakht¹, Zahra Abazari^{2*}, Mohsen Hajizinalabedini³, Fahimeh Babalhavaeji⁴

1. PhD student in Information Science, Islamic Azad University, North Tehran Branch, Iran.
2. Associate Professor, Department of Information Science, Islamic Azad University, North Tehran Branch, Iran.
3. Assistant Professor, Department of Information Science and Knowledge, Shahid Beheshti University, Tehran, Iran.
4. Associate Professor, Department of Information Science, Islamic Azad University, Science and Research Branch, Iran.

Article history:

Received date: 2020/08/22

Review date: 2020/10/25

Accepted date: 2020/10/31

Keywords:

Touch Sensory Books, Evaluation Criteria, Children's Books

Abstract

Purpose: To compare the production criteria of tactile sensory books from the perspective of production experts

Methodology: The method of the present study was combined in terms of applied purpose and qualitative-quantitative in terms of data collection. In the qualitative part, in order to obtain the consensus of experts in the production and publication of tactile sensory books, the Delphi method was used, and in the quantitative part, using a researcher-made questionnaire to the view of production and publishing experts regarding the production of tactile sensory books. Analytical survey form was performed. In the quantitative part, two relative coefficients of content validity and content validity index were used. The content validity index of the researcher-made questionnaire was reported to be higher than 0.79. The reliability of the questionnaire was 0.863 based on Cronbach's alpha coefficient. Also, for data analysis, descriptive statistics of mean and inferential statistics of "Friedman" were used with the help of SPSS software.

Findings: The findings indicate that the four sub-components of tactile capabilities, audience recognition, texture diversity, and form and shape diversity from the technical criterion of producing a tactile book with an average rank of 16 with the highest rank and the two components of natural objects and circulation or numbers with an average rank of 4.81 have the lowest rank. Regarding the production content criterion, the sub-components of attractiveness with the highest rank of 5.76 and the educational aspect of the content of these books from the point of view of production experts with 3.29 has the lowest position. In the criterion of presenting the production of a tactile book, the sub-component of effective and reciprocal communication with the audience has the highest rank with 5.55 and the role of librarian with 3.07 has the lowest rank.

Conclusion: by comparing the three main technical criteria, content and presentation of the production of tactile books, the most important criterion with an average rank of 2.67 content criteria was identified which has the most role for production from the perspective of production and publishing experts.

Please cite this article as: Nikbakht M, Abazari Z, Hajizinalabedini M, Babalhavaeji F. (2020). Comparative Study of Production Criteria of Tactile Books from the viewpoint of Production Specialists. *Iranian Journal of Educational Sociology*. 3(4): 180-189.

* Corresponding author: abazari391@yahoo.com

1. Introduction

Children's literature is the most reliable form of expression of human emotions, a forum in which one can create and improve one's world; we envision a future that is accessible to all. All children, without exception, should have the right to access appropriate literature for their age group in order to be able to strengthen their awareness of the culture and environment around them and thus achieve emotional, linguistic and intellectual levels (Ramirez, 2016). In total, children's literature is a world that takes people out of the real world and helps them step into the realm of imagination, a world that easily breaks deadlocks. It passes through mountains and plains and colors and images still have their quality and concentration. Even tastes and smells are felt with the depth of their own truth. It is the only children's world that believes in the flight of the bird rug and is amazed by the legend of the winged horse, the court and the fairies (Panahi, 2018). Numerous studies have shown that reading picture books supports various aspects of young children's learning and development (Kinney, 2020); thus, tactile sensory books of the type described help the child to understand their personal daily experiences and allow them to diversify, expand and change their experiences and produce their own personal story. The use of sensory books is suitable for all children, including ordinary children who simply do not have the ability to read, and special children (visually impaired and blind children, physically and mentally retarded children, etc.) who are slightly different and the world of their experiences. Is also different; Therefore, with tactile sensory books, children can be encouraged to read and develop an interest in reading. Because many concepts are not verbal, a visual representation of the environment is essential for children, especially special children, if they are to have a full understanding of the environment. Due to this, tactile sensory picture books are very important for literacy skills and emotional development in young children (Strangle, Kim, Yeh, 2014).

In this regard, by comparative study of the criteria for the production of tactile sensory books, we try to emphasize the technical criteria, content production and presentation criteria, the most important criteria for evaluating and producing tactile sensory books from the perspective of production experts of this book. Based on the strengths of this criterion and eliminating the weaknesses of other criteria, production experts can be guided to produce and publish tactile sensory books in the publishing market so that with the proper production of these books, a wide range of children, especially Children with special needs should benefit from the education of the first years of their lives. The Oxford Dictionary (2019) defines the tactile sensory book as a book that can be touched (Simpson, 1884). Touch books, on the other hand, are a tool that combines Braille text and touchscreens to increase access to books and reading for children, especially special children (Valente, 2016); Therefore, in order to produce these books, it is important to pay attention to some criteria, which are: 1. Existing technical criteria from the point of view of experts producing tactile sensory books, which are products and tools for producing mold and shape quality. Appearance of tactile sensory products involved in production and dissemination. 2. Existing content criteria from the point of view of experts producing tactile sensory books, which include the audience, the motivation and purpose of the audience's use, subject selection, copyright and editing. Criteria for providing tactile sensory books according to the experts who produce these books, which are: format of publication, distribution, narration, music, page layout (Charghani, Fahim Nia, Naghshineh, 2013).

Studies conducted from previous researches in the country show that so far no action has been taken to adapt the production of tactile sensory books, and the study of foreign backgrounds also shows that the studies conducted on books Touch sensation for special people with mental retardation has been much more and more diverse than the Iranian examples, which will be examined in the following. Zaker (2012) also examined the illustration of books for children with special needs, so according to this research, these children should be provided with opportunities to strengthen their imagination and using different types of games and types. Useful equipment such as toy and touch books to express ideas and feelings. Zaker's research showed that toy and touch books are among the most useful readings for special children and take

them out of isolation and encourage them to participate in reading and improve their language. Saffari (2014) in a study aimed at introducing some of the structures of illustration found that the types of illustration according to its relationship with the content, audience age, painting styles, coloring, page layout, binding and execution technique. Methods such as collage, three-dimensional illustration, cartoon images, cultural and ethnic illustration, the use of texture and composition, the use of decorative borders and framing, and sequential illustrated stories are among the solutions provided in these groupings for It is illustration. Zareian Jahromi (2015) examined sensory and tactile characteristics for group A and visually impaired children. The method of the present study was descriptive and its statistical population consisted of group A and visually impaired children. The findings indicated the usefulness and usefulness of this type of books. Strangle, Kim, Yeh (2014) presented new methods for designing and creating touch images in two books of touch images designed by handicrafts and 3D printing, respectively. By evaluating these books by experts, the results of their participation in a touch picture book contest and encouraging feedback from the public who bought the copies of the books indicate the usefulness of these books in teaching and learning. Learned and understood information better. Wang (2016) in a study entitled "The use of tactile materials in the design and printing of books" in China found that people through the sense of touch and study of various forms of traditional books and the gradual evolution of different types of books With special features, they can gain a lot of experience, and by touching the paper with the sensory organs, this connection with the environment is established, and the result of this connection is gaining oral experiences and developing the design and printing of books in the future.

In research by Fellenius (2018), the analysis of data collected in this project confirmed that tactile images provide a better understanding of words and concepts. It is also clear that touch images help blind people to create mental images in the same way that visual images create mental images for visually impaired people. Finally, tactile imagery is a tool for conveying information that can be used to describe reality in a tangible way. alton, Musetti (2019) in his research entitled "Making a touch picture book and multi-mode combination" with the aim of expanding the frameworks and methods of multi-mode combination, including touch design and the use of construction technologies, in the field Greater than designing and increasing access to picture books for children with visual impairments as part of a better book-making project, workshops for student participation in making audio and braille-enhanced touch books for young children with disabilities They designed vision. Undergraduate students in a children's literature class developed tactile retelling in a two-session workshop, and high school students in an ELA class designed and built 3D printed touch books over several weeks. The findings indicated that both preschool and high school students were aware of the importance of designing picture books, especially for children with visual impairments. In collaborative teams, they developed design skills in manipulating texture, shape, size, and spatial arrangement to express tactile reading and advanced meaning with sound. The results showed that practical concepts - multi-mode composition and construction can be integrated into volunteer literacy training to develop multi-mode communication skills and values and comprehensive design. Success depends on interdisciplinary expertise (For example: children's books, touch design, manufacturing technologies and so on) and adequate access to physical and digital materials and tools.

Vinter, Orlandi, Morgan (2020) in their study entitled "Identification of tissue tactile images in visually impaired and blind children" examined the high level of visual capacity variability of visually impaired children to accurately identify tactile images, which in most of these studies Embossed paintings were used as a stimulus for exploration and naming. The present study showed whether blind children aged 3 to 8 years showed a satisfactory ability to name the elements that make up tactile images with the interpretation that in a similar experimental environment, their natural reading conditions were tested. In this situation, textured touch images adapted from the original illustrated touch books for young children were used and participants first received information about the title of the book or listened to the text that accompanied each image, allowed reading to occur naturally in an experimental setting. The results showed that their

named scores were higher than previously reported at equivalent ages and did not correspond to sighted children of the same age. These scores were affected by the habit of harassment in blind children, and using some special exploratory methods, blind children, like other sighted people, benefited from the information provided prior to exploration. However, only when complete information was provided did it affect the way children explored. Touch recognition scores increase with age, regardless of visual status, with decreasing exploration time in blind children, while the opposite trend is observed in sighted children. These results in the light of the video mediation model show that blind children learn to convert tactile information into an image that is used to retrieve semantic information and involves increasing their exploration time. For this purpose, in order to compare the mentioned criteria, the following questions are asked: 1. what is the comparison of technical criteria for the production of tactile sensory books from the perspective of the experts in the production of these books? 2. What is the comparison of the content criteria of the production of tactile sensory books from the point of view of the experts in the production of these books? 3. What is the comparison of the criteria for presenting the production of tactile sensory books from the point of view of the production experts of these books? 4. What is the most important criterion for evaluating and producing tactile sensory books from the perspective of production experts?

2. Methodology

The present study was a hybrid applied in terms of purpose and qualitative-quantitative in terms of data collection. In the qualitative part, the Delphi method was used to obtain the consensus of experts in the production and publication of tactile sensory books, and in the quantitative part, using a researcher-made questionnaire to the views of production and publishing experts on the production of tactile sensory books. Analytical survey form was performed. The content validity index of the researcher-made questionnaire was reported to be higher than 0.79. The reliability of the questionnaire was 0.863 based on Cronbach's alpha coefficient. For data analysis, descriptive statistics of mean and inferential statistics of "Friedman" were used with the aim of quantitative prioritization of data using SPSS software. First, the content validity of the researcher-made questionnaire, which includes two parts, qualitative and quantitative, was examined. In the qualitative section of the narrative, the answers of 3 experts in the production of tactile sensory books were placed and they were asked to express their views and opinions about each item of the questionnaire and its relevance to the subject and objectives of the research. Express. After collecting comments, the mentioned points were corrected.

In the quantitative method, two relative coefficients of content validity and content validity index were used. The results obtained on 6 experts and specialists in this field showed that the relative value of the content of 37 items out of 56 items of the questionnaire ranged from 0.99 to 1, which was higher than the critical coefficient of 0.99. However, the relative validity coefficient values of 19 items were lower than the critical coefficient values and were removed. In addition, the findings indicated that in the content validity index of the questionnaire, with the exception of the same 19 items that were lower than the standard value of 0.79, the content validity index of 37 other items of the questionnaire ranged from 0.79 to 1. Therefore, 37 questionnaire items were approved by experts in terms of two relative coefficients of content validity and content validity index, and finally, out of 33 production experts, 21 were randomly selected and the questionnaire was distributed and completed. In order to determine the reliability of the questionnaire, Cronbach's alpha coefficient was used. The results obtained with 37 items on 21 experts and specialists showed that the value of alpha coefficient is equal to 0.863. After obtaining validity and validation coefficient, the questionnaire was reviewed by 21 production experts in Delphi method in 3 periods and finally the same 37 questions were approved. To analyze the data, descriptive statistics of mean and inferential statistics of "Friedman" were used with the aim of quantitative prioritization of data using SPSS software.

3. Findings

The findings of this study were reviewed in order to prepare and produce tactile sensory books through a survey of production experts to find the components of important criteria for the production of such books to pay attention to the most important criteria to The title of the main and important factor of production, to take measures to adapt their production, production and publication, and to be able to make these books more accessible for the use and educational development of children, and also to be able to weaken the criteria that are less important. To improve production; Therefore, in response to the research questions as follows, it is stated as follows:

Table1. Descriptive data and results of Friedman test to compare items related to technical criteria for the production of tactile sensory books

Statistical properties of components	Average	Standard deviation	The lowest score	The highest score	Average ratings	Priorities	χ^2	Df	Sig
Touch sense capabilities	5	0	5	5	16	1	306/5	21	0/000
Recognize the visual elements of the book	4/52	0/51	4	5	11/69	8			
Recognize the audience	5	0	5	5	16	1			
Book guide	4/95	0/22	4	5	15/55	2			
foam	3/76	0/7	3	5	6/36	12			
Talc	3/57	0/6	3	5	5/31	14			
All kinds of fabrics and felts	3/91	0/7	3	5	7/14	10			
Types of fibers such as cotton and ...	3/86	0/73	3	5	6/93	11			
Types of yarn (ribbon - braid - yarn, etc.)	3/86	0/73	3	5	6/93	11			
Dolls	3/62	0/59	3	5	5/38	13			
Natural objects	3/52	0/51	3	4	4/81	15			
Lack of chemicals and allergens	4/95	0/22	4	5	15/48	4			
Strength	4/95	0/22	4	5	15/48	4			
Tissue diversity	5	0	5	5	16	1			
Variety of forms and shapes	5	0	5	5	16	1			
Book guide	4/86	0/36	4	5	14/79	6			
Circulation or counters	3/48	0/68	3	5	4/81	15			
Book prices	4/24	0/63	3	5	9/12	9			
Production Managers	4/62	0/67	3	5	13/19	7			
Edit images	4/95	0/22	4	5	15/5	3			
Text editing	4/91	0/3	4	5	15/05	5			
Pre-production editing	4/95	0/22	4	5	15/5	3			

The results obtained from Table 1 indicate that all 21 production and publishing experts studied in four items 3 (tactile capabilities), 5 (audience recognition), 17 (texture diversity) and 18 (form diversity and Figure) Technical criteria everyone chose the "too much" option. In addition, the findings showed that there are differences between the mean rank of the technical standard items, so that the average rank of the four mentioned items ($\bar{x}_j = 16$) is the same as the average rank of other items. There have been more raised in this criterion. Since the distribution of Friedman test with degree of freedom $1-k = df$ is almost the same as the distribution of chi-square test with the same degree of freedom, so compare the result of Friedman test with the chi-square test of the standard table and according to this The value of the calculated Friedman test ($\chi^2 = 306.5$) was greater than the value of the critical chi-square test ($\chi^2 = 38.93$) with a degree of freedom of 21 at the level of $P < 0.01$, so the null hypothesis of the test is rejected and It can be concluded

that the items that constitute the technical criterion were not of equal importance to the production and publishing experts.

Table2. Descriptive data and results of Friedman test to compare items related to the content criterion of production of tactile sensory books

Statistical features of components	Average	Standard deviation	The lowest score	The highest score	Average ratings	Priorities	χ^2	Df	Sig
Training	4/76	0/44	4	5	5	3	38/8	7	0/000
Being enjoyable	4/67	0/48	4	5	4/62	4			
To be attractive	4/95	0/22	4	5	5/76	1			
Being simple and understandable	4/91	0/3	4	5	5/57	2			
The age of the addressee	4/48	0/51	4	5	3/86	6			
Being educational	4/43	0/51	4	5	3/67	7			
Being an educational assistant	4/24	0/63	3	5	3/29	8			
the literature	4/57	0/51	4	5	4/24	5			

The results of Table 2 indicate that item 14 (attractiveness) in the content criterion showed the highest average ($\bar{x} = 4.95$) and the lowest average in this criterion belonged to item 27 (teaching aid). The results also showed that the mean rank of the item of attractiveness ($\bar{x}_j = 5.76$) was higher than the average rank of other items mentioned in this field. Since the value of the resulting Friedman test ($\chi^2 = 38.8$) was greater than the value of the critical chi-square test ($\chi^2 = 18.48$) with a degree of freedom of 7 at the level of $P < 0.01$, so it can be concluded There was a statistically significant difference and the items that formed the content criterion were not of equal importance to the production and publishing experts.

Table3. Descriptive data and results of Friedman test to compare items related to the criterion of producing touch sensory books

Statistical properties of components	Average	Standard deviation	The lowest score	The highest score	Average ratings	Priorities	χ^2	Df	Sig
Information and advertising	4/33	0/48	4	5	3/57	6	33/75	6	0/000
Child	4/43	0/51	4	5	3/9	4			
Parents	4/48	0/51	4	5	4/07	3			
Educational Instructors	4/38	0/5	4	5	3/74	5			
Librarian	4/19	0/4	4	5	3/07	7			
Expressive voice and articulation	4/48	0/6	3	5	4/1	2			
Effective and reciprocal communication with the audience	4/91	0/3	4	5	5/55	1			

The results of Table 3 indicate that according to the study production and publishing experts, item 37 (effective and reciprocal communication with the audience) has the highest average ($\bar{x} = 4.91$) in the criterion of presentation and the lowest average among them. It was related to item 35 (librarian). Other results showed that the mean rank of effective and reciprocal relationship with the audience ($\bar{x}_j = 55.5$) was significantly higher than the mean rank of other items mentioned in this criterion. The results of Friedman test also showed that the value obtained ($\chi^2 = 33.75$) is greater than the value of the critical chi-square test ($\chi^2 = 16.81$) with a degree of freedom of 6 at the level of $P < 0.01$. Be. Therefore, it can be concluded that the assumption of equal importance of items was rejected and the items that constitute the criterion for presentation were not of equal importance to the production and publishing experts under study.

Table4. Descriptive data and results of Friedman test to compare the production criteria of tactile sensory books

Statistical features of the criteria	Average	Standard deviation	The lowest score	The highest score	Average ratings	Priorities	χ^2	Df	Sig
Technical	4/43	0/17	4/18	4/73	1/57	3	14/73	2	0/001
Content	4/63	0/25	4/25	5	2/67	1			
Presentation	4/46	0/33	4	5	1/76	2			

Since the number of items of the three criteria was different from each other and in order to maintain the comparability of the criteria, the average of the responses given to the items of each criterion was considered as the score of that criterion. Thus, the scores of each criterion are in the range of 1 to 5. In general, the results obtained from Table 4 indicate that the average content criterion ($\bar{x} = 4.63$) is higher than the average of the other two criteria, while the average rank of this criterion ($\bar{x}_j = 2.67$) ratio It was much higher by the other two criteria. Also, the results of Friedman test in this field showed that the calculated value ($\chi^2 = 14.73$) is greater than the value of the critical chi-square test ($\chi^2_{0.01} = 5.99$) with a degree of freedom of 2 at the level of $P < 0.01$. Therefore, it can be concluded that from the point of view of the production and publishing experts under study, the criteria considered for the production of tactile sensory books were not of equal importance.

4. Discussion

Studies of the research findings showed that in response to the first research question: Comparison of technical criteria for the production of tactile sensory books from the perspective of production experts, it can be said that among the components of the technical criteria are: : The capabilities of the sense of touch, recognizing the visual elements of the book, recognizing the audience, the guide accompanying the book, the type of materials used such as foam, talc, types of fabrics and felts, types of fibers such as cotton, etc., types of yarn (ribbon - braid - yarn And ...); Types of shapes and materials that can be used in these books such as dolls, natural objects, lack of chemicals and allergens, as well as strength and variety of textures, variety of forms and shapes, accompanying book guide, circulation or numbers, book prices, production staff, image editing, editing Text, pre-production editing; The 4 components of tactile capabilities, audience recognition, texture diversity, and form and shape diversity are all equally important from the point of view of production and publishing experts with an average of 16th rank.

Comparing other components, it can be concluded that these components, which constitute the technical standard, were not of equal importance to the production and publishing experts under study. Regarding the comparative study of the content components of the production of tactile sensory books in response to the second research question, which is: Comparing the content criteria of the production of tactile sensory books from the perspective of production experts, it seems that: Among the components involved in measuring this criterion such as teaching, enjoyment, attractiveness, simplicity and comprehensibility, audience age, educational aspect and teaching aid, as well as the literature aspect of these books, respectively, the criterion of attractiveness with rank. 76. and being a teaching assistant with a rank of 3.29 have the highest and lowest rank and other components are not of equal importance, while components such as simplicity and comprehensibility with the average Rank 57.5 and enjoyable with 4.62 are also in the right order according to their ranking in the polls and should be on them in order to produce books. Finally, in response to the third research question: Comparing the criteria for presenting the production of a tactile sensory book from the perspective of production experts, it can be said that by comparing the components of the presentation criteria Such as the aspect of information Sponsorships and advertisements for these books and attention to the child himself, parents, educators, librarians, loud voice and articulation and effective and interaction with the audience as the criteria for the optimal presentation of these books to children, concludes as follows. The effective and reciprocal relationship with the rank of 5.55 in presenting to the audience is the most important from the point of view of production and the least belongs to the librarian with the rank of 3.07 and this means that from the point of view of production and

publishing experts librarians in presenting this The special class has the least role and components such as expressive voice and articulation with a rank of 4.1, parents 4.7 and educational educators 3.74 have the greatest impact on the presentation of such books, respectively, and in All the components of the presentation criterion were not of equal importance. According to the reviewed criteria, finally in response to the fourth research question, what is the most important criterion for evaluating and producing tactile sensory books from the perspective of production experts? It is concluded that among the general comparison of research criteria, the content criterion with an average rank of 2.67 has the most role for production from the perspective of production and publishing experts, and at the same time the criteria considered for the production of books Touch senses were not of equal importance.

Considering that the present study seeks to compare the production criteria of tactile sensory books from the perspective of experts in the production of tactile sensory books, it is possible to compare previous research with current research in order to direct the process. The present study acknowledged: The present study is similar to Ghaeni (2002) in terms of dealing with tactile sensory books, of which visual stories are a part, as well as in terms of considering children. With the difference that in his research he has presented how to present visual stories with words and without words to present to children and only in the child component is the criterion of book production and the audience component is the criterion of content of book production. While the current research has examined the criteria of presentation, content and technology in general and as a criterion for the production of such books, Moallemzadeh Ansari (2002), Manafi (2008), Ghanbari (2010) all with the aim of designing a tactile and visual sensory book and examining the conditions of compiling such books for children and adolescents and students with vision problems with research. The current ones have similarities. Because in this study, the general public, both ordinary and special, have been considered in the production of such books, and their differences are that they only sought to design these books in While this research intends to compare the technical criteria, presentation and content to encourage producers and publishers to produce these books. Zaker (2013) and Zareian Jahromi (2015) also examined the details of the data that in terms of addressing this particular age group and processing graphic and technical features, only meet the technical criteria of the study. Saffari (2014) also expressed the illustration structures of children's and adolescents' books according to their relationship with the content, age of the audience, painting styles, coloring, page layout, binding and execution technique. The texture, composition, etc. are in line with the components of technical criteria and the content of the present study.

Charghani, Fahim Nia, Naghshineh (2014) in terms of introducing production criteria and evaluation of illustrated books from the perspective of producers are completely in line with this research and the difference between these two studies is that in Charghani's research has examined illustrated books. The present study has examined tactile sensory books. A review of research outside of Iran also shows that Moyer (2011) in his dissertation prioritized young people reading at 10:30 (print, electronic, audio), while this research is somewhat in terms of the type of reading material. Print and audio are similar to illustrated books that can be attached to tactile sensory books, but are inconsistent in terms of age and the study of electronic formats for the age group of current research audiences who are children. Jones et al (2012), Morash, McKerracher (2012) also acknowledged in their research that the use of tactile sensory images in textbooks of students, especially the disabled, is a great help in understanding the content. The sense of touch and learning to read, understand the concept and abstract thinking in these people, which in terms of understanding the content is somewhat in line with the study in terms of examining the components of the content standard, but in terms of addressing the educational aspect and grade Sunni does not overlap with current research. Strangle, Kim, Yeh (2014) and Wang (2016) were trying to design and create touch picture books according to the traditional and manual roots of printing these books and producing them in 3D printing, which was somewhat in terms of review. The production conditions of touch picture books are in line with the current research, but in terms of production, a special process based on 3D printing,

considering the traditional and manual origins of printing, bears no resemblance to the current research. Fellenius (2018) in their research sought to help understand the concepts of lessons for students with visual impairments, using tactile or electronic sensory books that in terms of the type of reading material and content criteria with the research Flenius's research has focused more on the educational aspect and teaching aid, which is a sub-component of the content criterion, in the student community, while in the current research, these aspects are at the level of Children and from the perspective of manufacturers.

Dalton, Musetti (2019) in their research made touch sensory books through a combination of several modes for different ages, which is somewhat consistent with the current research on the production of such books for children. Finally, the results of the research of Vinter, Orlandi, Morgan (2020) in the light of the image mediation model show that blind children learn to convert tactile information into an image that is used to retrieve semantic information and includes It is an increase in their exploration time and is in line with the present study in terms of examining visual and tactile information in the form of a model in visually impaired and blind children. In general, previous studies and their comparison with current research show that attention to the production of books and sensory reading materials and other items such as illustrated books, electronics, video, 3D, etc. are always considered. Researchers, but in the field of education and in the upper age group, especially for certain groups (blind and visually impaired and mentally retarded) more work outside Iran and in Iran due to the fact that in the field of books The child has worked a lot, but not much has been done about the production of tactile sensory books due to many problems, including the cost and price of making and producing these books, and the lack of fully specialized publishers in this field and their scarcity. Is; Therefore, suggestions can be made to improve the production conditions of these readings.

According to the studies conducted from the research, suggestions can be made in order to strengthen the weaknesses and maintain the strengths, including: 1. More attention to some important and effective components in the technical criteria that are less considered by production experts It is like the types of materials used in making these books that help to better understand the audience when touched, especially certain people such as the blind and partially sighted. 2. Paying more attention to the necessary editing principles in the production of tactile sensory books, which to a large extent helps to attract the audience and make them easier to use. 3. Paying more attention to educational points and educational assistance, taking into account the age of the audience and the enjoyable, simple and understandable aspect of this group of books during production and publication, in order to create a better publishing market and more consumers with satisfaction. 4. Finally, pay more attention to the presentation criteria and how to present these readable and tangible materials and technical criteria involved in production so that at the lowest cost, high circulation and quality to meet the information needs of this segment of society.

References

- Charghani M, Fahim Nia F, Naghshineh N. (2013). Criteria for evaluating and producing illustrated books from the perspective of manufacturers: Qualitative content analysis. *Information Research and Public Libraries*, 81: 235 - 257.
- Dalton B. Musetti, K (2019). Tactile Picture Book Making and Multimodal Composition: Students Design for Equity in English Language Arts. University of Colorado Boulder, in book: *Best Practices in Teaching Digital Literacies* (pp.195-213).
- Fellenius K. (2018). The Interaction between Braille and Tactile Pictures for Deeper Understanding. Department of Art History and Visual Studies, Goteborg University /Malardalen University.
- Ghaeni Z. (2002). Reaction of 4- to 6-year-olds to picture books (fiction). *Journal of Children and Adolescent Literature*, (30): 91-96.
- Ghanbari M. (2010). Study of three-dimensional illustration of children and adolescent story books in Iran. Master Thesis in Illustration, University of Arts, Shahed.
- Jones M G, Forrester J H, Robertson L E, et all. (2012). Accuracy of estimations of measurements by students with visual impairments. *Journal of Visual Impairment & Blindness*, 106(6): 351–355.
- Kinney B. (2020). "Reference Transparency in Young Children's Picture Books: An Experimental Study" (2020). Thesis retrieved on October 15, 2020 from the site
- Manafi A. (2008). Video touch books (illustration of Atel Motel Tutuleh's poetry book for blind children). *Journal of Exceptional Education*, 83: 35 - 48.
- Moallemzadeh Ansari M. (2005). A tactile sensory book based on the stories of Kelileh and Demneh. Master Thesis, Faculty of Literature, University of Tehran.
- Morash V, McKerracher A. (2012). A review of haptic spatial abilities in the blind. *Spatial Cognition & Computation*, 12 (2-3): 83-95.
- Moyer J E. (2011). Teens Today Don't Read Books Anymore: A Study of Differences in Comprehension and Interest across Formats Doctoral dissertation, University of Minnesota.
- Panahi P. (2018). A look at children's literature. Retrieved October 16, 2020 from the site <http://www.melpomene.ir>
- Ramirez M E. (2016). Why children's literature? Translated by Arash Khoshsafta. Retrieved October 16, 2020 from the site <http://www.melpomene.ir>
- Saffari S. (2014). Investigating the illustration structures of children's books. *Journal of Arrangement*, 3 (7): 76-83.
- Simpson J. (1884). *The Oxford English Dictionary is the principal historical dictionary of the English language*, Edited by James Murray, published by Oxford University Press.
- Strangle J, Kim A, Yeh T. (2014). "3D printed tactile picture books for children with visual impairments: a design probe," in *Proceedings of the 2014 conference on Interaction design and children*, 321–324.
- Valente D. (2016). Tactile books for blind children: a design for all approach.
- Vinter A, Orlandi O, Morgan P. (2020). Identification of Textured Tactile Pictures in Visually Impaired and Blindfolded Sighted Children. *Frontiers in psychology*, Published online 2020.
- Wang Y. (2016). Research on the application of tactile materials to design and printing of books (Conference Paper). China. Dalian Polytechnic University, Institute of Clothing, Dalian Liaoning.
- Zaker Z. (2012). Book illustration for children with special needs (slow step). Master Thesis in Illustration, Faculty of Art and Architecture, Islamic Azad University, Central Tehran Branch.
- Zareian Jahromi M S. (2015). Illustration of tactile sensory books for group A and visually impaired children. Master Thesis in Illustration, Faculty of Art and Architecture, Islamic Azad University, Central Tehran Branch.