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Integrating Gestalt Theory Concepts in Visual Perception Assessment for Children with Intellectual Disabilities

Muh. Rijal[1*], Mumpuniarti[2], Muh. Asriadi A. M.[3]

[1,2] Department of Special Education, Faculty of Education and Psychology, Yogyakarta State University, Yogyakarta, Indonesia
[3] Department of Early Childhood Eduacation Taacher Education, Universitas Pendidikan Indonesia, Bandung, Indonesia

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ABSTRAK

Anak-anak dengan disabilitas intelektual mengalami kesulitan dalam memahami dan merespons informasi visual, yang dapat menghambat perkembangan dan pembelajaran mereka. Salah satu faktor yang menyebabkan hal ini adalah kurangnya instrumen asesmen yang memadai dan relevan yang merefleksikan kompleksitas proses persepsi visual pada anak dengan disabilitas intelektual. Penelitian ini bertujuan untuk menghasilkan asesmen persepsi visual khusus untuk anak dengan disabilitas intelektual, dengan memanfaatkan konsep-konsep teori Gestalt. Penelitian ini menggunakan pendekatan Research and Development (R&D) dan model ADDIE. Metode pengumpulan data yang digunakan adalah kuesioner dengan instrumen berupa lembar kuesioner. Instrumen ini dirancang dan diuji validitasnya oleh 11 orang ahli dan diujicobakan kepada 50 orang responden anak tunagrahita. Dalam penelitian ini, terdapat beberapa teknik analisis data, seperti validitas isi yang dianalisis dengan Aiken's V Coefficient, sedangkan reliabilitas instrumen diestimasi dengan rumus Cronbach's Alpha. Selanjutnya, analisis faktor eksploratori (EFA) dilakukan dengan menggunakan perangkat lunak JASP untuk mengelompokkan item-item kuesioner ke dalam faktor-faktor berdasarkan dimensinya. Hasil penelitian menyatakan bahwa, secara keseluruhan, instrumen dianggap valid dan reliabel untuk mengukur kemampuan persepsi visual anak dengan disabilitas intelektual. Penelitian ini memberikan kontribusi penting dalam pengembangan asesmen yang dapat diaplikasikan dalam pendidikan dan intervensi, meningkatkan pemahaman dan dukungan terhadap perkembangan visual anak dengan disabilitas intelektual.

ABSTRACT

Children with intellectual disabilities have difficulties understanding and responding to visual information, which can hinder their development and learning. One of the factors leading to this is the lack of adequate and relevant assessment instruments that reflect the complexity of visual perception processes in children with intellectual disabilities. This study aims to develop a special visual perception assessment for children with intellectual disabilities, utilizing the concepts of Gestalt theory. This study used the Research and Development (R&D) approach and the ADDIE model. The data collection method used was a questionnaire with an instrument in the form of a questionnaire sheet. This instrument was designed and tested for validity by 11 experts and tested on 50 respondents of children with intellectual disabilities. In this study, there were several data analysis techniques, such as content validity being analyzed with Aiken's V Coefficient, while instrument reliability was estimated with Cronbach's Alpha formula. Furthermore, exploratory factor analysis (EFA) was conducted using JASP software to group the questionnaire items into factors based on their dimensions. The results stated that, overall, the instrument was considered valid and reliable for measuring the visual perception ability of children with intellectual disabilities. This study makes an important contribution to the development of assessments that can be applied in education and intervention, improving understanding and support for the visual development of children with intellectual disabilities.

1. INTRODUCTION

Developing assessment instruments is very important in educating children with intellectual disabilities. Assessment is carried out to screen children's abilities, classification, placement, and determination of educational programs and determine the direction and educational needs of children with intellectual disabilities. One of the assessment processes that will be the main step in measuring and assessing the abilities or barriers in children with intellectual disabilities is visual perception assessment, which is used to diagnose and improve the learning process (Ibnu & Haryanto, 2019; Rosidah et al., 2021). The main problem faced by children with intellectual disabilities is significant difficulty in understanding and responding to visual information. This is related to deficits in conceptual, social, and practical domains characteristic of children with intellectual disabilities (Association, 2013; Heward et al., 2017). These

*Corresponding author.
E-mail addresses: muhrijal.2022@student.uny.ac.id (Muh. Rijal)

obstacles will also impact perception, concentration, and memory, so they have limitations in remembering and reflecting on observed objects and ideas in abstract thinking, which affects development. Inhibited visual perception can seriously impact their ability to learn, especially in the context of reading skill acquisition (Anggraeni et al., 2018; Mumpuniarti, 2019; Rose A. Sevcik, Andrea Barton-Hulsey, Casy Walters, 2019). Not many visual perception assessment instruments have been standardized and widely used, do not fully reflect the complexity of visual perception processes in children with intellectual disabilities, and there has not been sufficient emphasis on aspects of Gestalt theory, especially for children with intellectual disabilities. Yet, it is important to understand that these visual perception assessments can be a very useful foundation for teachers in identifying students' basic abilities. These limitations encourage the need to develop adequate and relevant visual perception assessment instruments for children with intellectual disabilities.

Visual perception, as the process of receiving and interpreting visual stimuli, is key to accurately judging objects' size, configuration, and spatial relationships (Nabilah et al., 2018; Ruslan et al., 2021). Lack of ability to perform visual perception well can result in difficulty distinguishing visual and auditory information. Visual perception helps a person to make accurate judgments about the size, configuration, and spatial relationships between objects because most of the information received from outside is through the sense of sight or eyes (Anggraeni et al., 2018; Aprilia Ulfaitul Inka, Fathurohman, 2021; Sarajar, 2021). Analysis of the research literature shows that existing visual perception assessment instruments have not fully integrated the concepts of Gestalt theory, and emphasize general aspects for children with intellectual disabilities rather than providing adequate focus on the visual perception abilities of children with intellectual disabilities. Developing assessment instruments specifically designed to measure the visual perception of children with intellectual disabilities is essential (Baldeón et al., 2022). These instruments will support educators in identifying children's needs and designing appropriate intervention programs to provide appropriate and specific treatment for children.

Recognizing this gap, this study aims to fill the gap by exploring the potential integration of Gestalt theory concepts in developing assessment instruments. One approach that can be integrated in developing visual perception assessment instruments is the concept of Gestalt theory. Gestalt theory is a conceptual framework in psychology that suggests that humans tend to organize their experiences and perceptions into patterns that have meaning and a whole so that it has a major contribution to the field of perception, especially in visual perception. Gestalt theory provides a strong foundation for developing visual perception assessment instruments for children with intellectual disabilities. The basic concepts in Gestalt theory, discovered by its originators such as Max Wertheimer, Wolfgang Kohler, and Kurt Kofka, have significant relevance in this context (Liang, 2018; Mungan, 2021; Safitri et al., 2021). Gestalt theory emphasizes the importance of understanding, processing, and reorganizing visual information as an integral part of learning (Amanatiadis et al., 2018; Mungan, 2023). In the development of this instrument, Gestalt concepts such as the law of proximity, the law of enclosure, the law of similarity, as well as the principles of continuity and figure-ground relationships, can be used as a basis for designing relevant and innovative assessment tasks (Buffart & Jacobs, 2021; van der Zee et al., 2019).

By integrating Gestalt principles into visual perception assessment instruments, teachers can more effectively assess the understanding and abilities of children with intellectual disabilities related to visual content (Sevcik et al., 2019; Saleh & Battisha, 2020). This integration, focusing on specific aspects of visual perception ability, allows for the creation of a more accurate and relevant instrument. This instrument aims to identify the needs of children with intellectual disabilities in processing visual information, enabling teachers to design learning programs or strategies better suited to individual children's needs. Therefore, incorporating Gestalt theory into the development of this assessment instrument is a crucial step in supporting the progress of children with intellectual disabilities in the learning process, providing a solid foundation for intervention. Therefore, the purpose of this research is to produce a special visual perception assessment for children with intellectual disabilities, utilizing the concepts of Gestalt theory. This integration is expected to offer both practical and theoretical contributions by applying Gestalt principles in designing assessment tasks, significantly enhancing the educational support provided to children with intellectual disabilities. As a result, this study aims to address the existing gap by integrating Gestalt theory concepts into the development of visual perception assessment instruments tailored for children with intellectual disabilities.

2. METHODS

The research approach used is Research and Development (R&D), A method used to produce products, validate products, and test the effectiveness of these products, (Sugiyono, 2019). which aims to produce a scale-shaped instrument product that can be used to measure the visual perception abilities of

children with intellectual disabilities. The development process refers to the ADDIE development model. It is combined with Mardapi's instrument development steps, which focus on the steps of analyzing needs and designing appropriate instruments to measure the visual perception abilities of children with intellectual disabilities. The whole research process is presented in Figure 1.

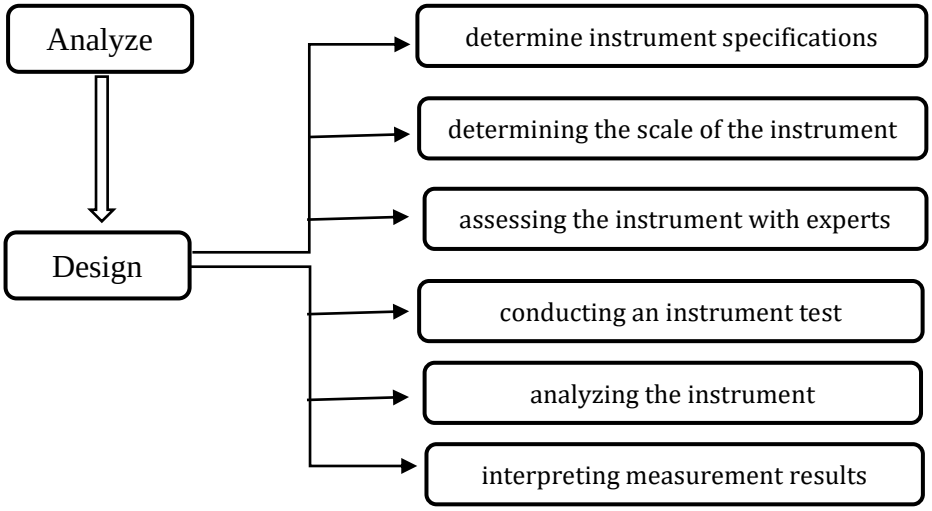

Figure 1. Development Step (Mardapi, 2017; Owens, L., & Kadakia, 2020)

The research subjects involved experts jugdment, including one professor of children with intellectual disabilities, six academics and four homeroom teachers. The content validation process of the instrument was conducted through expert testing to assess the instrument's content validity. Experts provided crucial comments and suggestions for the restructuring and development of the instrument. After the assessment by experts, the restructured and developed instruments were tested on students diagnosed as children with intellectual disabilities. The pilot test involved 20 subjects at SLB C Wiyata Dharma 2 Sleman and 30 at SLB Negeri 1 Yogyakarta. Student participation in the pilot test aims to ensure that the instrument developed can effectively measure the visual perception abilities of children with intellectual disabilities. The trial process was carried out by paying attention to the clarity of questions, student responses, and the time required to complete the test. The pilot test results were analyzed to evaluate the practical feasibility of the instrument and see the potential for further improvement before broader use of the instrument and can contribute to enriching understanding of visual perception in children with intellectual disabilities.

The visual perception test instrument developed in this study is an evaluation tool modified to suit the ability level of children with intellectual disabilities. This instrument has been integrated with the principles of Gestalt Theory, which focuses on how humans organize and understand visual information. The indicators developed in this instrument are based on the components or laws of Gestalt Theory, such as the laws of proximity, similarity, Continuity, Closure, and Figure-Ground. Then, these indicators are transformed into specific questions enriched with images according to each component of Gestalt theory. Thus, these items were used to test visual comprehension and perception in the context of a diagnostic test. An instrument is considered valid if the experts (expert judgment) are confident that the tool measures the aspects that will be desired. The scale used uses the Likert scoring method, with five response options: strongly disagree (score 1), disagree (score 2), neutral (score 3), agree (score 4), and strongly agree (score 5) (Arikunto, 2017). The following variables from the development of visual perception instruments integrated with Gestalt theory are presented in Table 1.

Proof of content validity is analyzed using Aiken's V Coefficient. This coefficient is used to measure the level of agreement between experts related to the instrument's content validity and identify the extent to which the questions and concepts in the instrument reflect precisely and accurately the aspects to be measured. The estimation of instrument reliability is carried out with an internal consistency approach using Cronbach's Alpha formula. This reliability analysis aims to assess the reliability of the instrument and provides consistent results if tested on the same sample. After producing a valid and reliable instrument construct, it was tested, and the results were analyzed using the EFA (Exploratory Factor Analysis) method with JASP software assistance. The EFA method is carried out to see items in the questionnaire instrument by the variables to be measured by categorizing items into factors based on their respective dimensions.

Table 1. Lattice of Visual Perception Instrument Development Integration of Gestalt Theory

No.	Dimension	Item Code
1	Proximity	P1 P2
2	similarity	S1 S2
3	Continuity	R1 R2
4	Closure	Q1 Q2
5	Figure-Ground	T1 T2

3. RESULT AND DISCUSSION

Results

The data used in this study were obtained from two primary sources: the validation process by experts and the pilot test on children with intellectual disabilities. Before the research instrument was used in a practical situation, it went through the validation stage by eleven experts. Experts were asked to rate each instrument item using a scale of 1 to 5 where 1 = very invalid, 2 = invalid, 3 = quite valid, 4 = valid, and 5 = very valid. After the validation stage by experts was completed, the instrument was tested on learners with characteristics of intellectual disabilities.

Content validity analysis using Aiken's V formula involves 11 expert judgment on an item to assess the extent to which the item reflects the measured construct. This analysis aims to determine the validity of the instrument items formed from each indicator,(Yuniarti et al., 2023). More information about the results of the validity proof can be seen in Table 2.

Table 2. Data Analysis of Instrument Validity Test

Item	V-Aiken	Cut-Score	Category
P1	0.79545	0.70	Valid
P2	0.86364	0.70	Valid
Q1	0.88636	0.70	Valid
Q2	0.81818	0.70	Valid
R1	0.79545	0.70	Valid
R2	0.90909	0.70	Valid
S1	0.81818	0.70	Valid
S2	0.84091	0.70	Valid
T1	0.90909	0.70	Valid
T2	0.79545	0.70	Valid

Based on Table 2. The ratings from the validators have been analyzed using Aiken's V formula, with a validity value set at 0.70 for 11 validators with the highest answer score of 5. The analysis results show that the V-Aiken value for each item in this visual perception instrument is >0.70, it can be concluded that all items in this instrument have met the validity standards set based on Aiken's V.

The results of proving the internal consistency reliability estimation with Cronbach's alpha, if it shows greater than Cronbach's alpha 0.60, then the visual perception assessment instrument has been designed as a reliable instrument category. Based on the SPSS output above, Cronbach's Alpha analysis results obtained 0.859> 0.60, including in the reliable/reliable category. So, based on these criteria, the visual perception assessment instrument is classified as having reliable or adequate internal consistency. The content validity and reliability analysis results show that all items in the instrument have proven to be valid in terms of content validity, and the results of Cronbach's alpha analysis show adequate reliability. Therefore, the instrument can be considered a reliable and good tool for further instrument trials. Next, the product trial was continued to identify the instrument constructs and ensure that the items could measure the variables. The instrument constructs were then analyzed using the EFA (Exploratory Factor Analysis) method. The EFA method is used to identify items in the questionnaire that match the variables to be measured by grouping the items into factors. Each item is tested using JASP software, which is described using descriptive statistics.

Olkin, Kaiser Meyer The Measure of Sampling (KMO) and Measure of Sampling Adequacy (MSA) are used to create valid and reliable instruments. The KMO value must be greater than 0.7, considered a good measure of factor fit. Sample adequacy must be met, which is measured using the MSA value with a minimum value that must be achieved of 0.5. The analysis results show that the KMO value 0.771 exceeds the expected 0.7 threshold. In addition, all items have an MSA value greater than 0.5, indicating that the items can be considered suitable for use.

Bartlett's test measures the sphericity of the data, which is used in multivariate analysis to test for a covariance matrix that is significantly different from the identity matrix, where the significance value is 0.05 then this indicates that the intercorrelation matrix is not equal to the identity matrix. Factor analysis can be performed. The analysis results showed that Bartlett's test values met the requirements. The significance level is 0.001, less than 0.05, indicating a relationship between the variables..

An item's validity level can be expressed through the factor loading value. If the factor loading of an item is less than 0.05, then the item is considered invalid and needs to be removed from the instrument. The analysis results in the table show two factors based on the maximum likelihood (ML) value. The first factor consists of P1, P2, Q1, Q2, R1, and R2. The second factor includes items S1, S2, T1, and T2. The results of the EFA validity analysis show that nine items are considered valid because they have a factor load value >0.5. Item T2 is considered invalid because it has a load factor value <0.5 and is the only item not meeting the validity criteria.

Model fit assessment is done through statistical tests that rely on several metrics, such as RMSE (Root Mean Square Error of Approximation) and TLI (Tucker-Lewis Index) values. RMSE, which measures the error between the observed and estimated covariance matrices and is normalized by considering the degrees of freedom, RMSE values between 0.05 and 0.08 are considered good indicators for accepting model fit. The TLI (Tucker-Lewis Index) value refers to the normalized ratio and can provide information about the extent of the tested model; a higher TLI value indicates that the level of fit between the tested model and the observed data is getting better. Generally, if the TLI value exceeds 0.90, this indicates that the model is a "good fit", and if it exceeds 0.95, this suggests that the model is a "very good fit".

Based on data analysis, the RMSE has a value of 0.076, within the range between 0.05 and 0.08, indicating that the proposed model fits the data. In addition, TLI has a value of 1.006, which suggests that the model is a very good fit. Therefore, it can be concluded that the instrument developed to evaluate the visual perception of children with intellectual disabilities using EFA analysis as its basis meets the fit standard and can be used to measure relevant variables.

The screen plot graph is one method for determining the instrument's number of factors or dimensions. The scree plot graph illustrates the eigenvalue due to the number of factors extracted. Several factors can be identified through the scree plot points that begin to appear and look flat. The following is a scree plot with parallel analysis. which is presented in Figure 2.

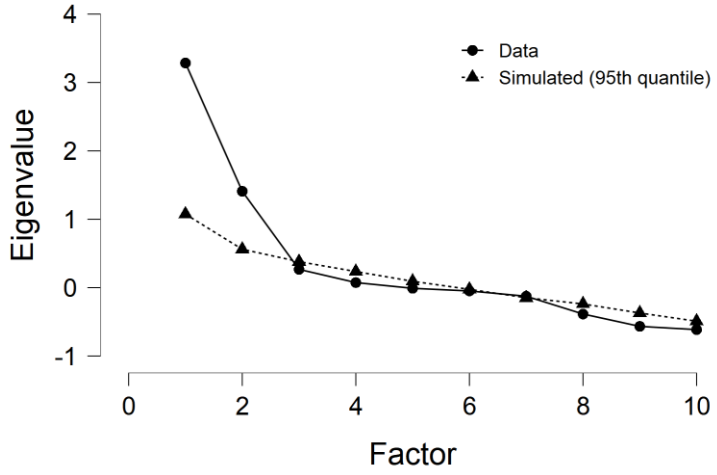

Figure 2 Scree Plot with Parallel Analysis

The scree graph shows a significant decrease at the third point when looking at the number of factors extracted on the horizontal axis against the vertical axis, as seen in Figure 2. Therefore, the instrument to measure the visual perception of children with intellectual disabilities consists of two factors.

A reliable instrument can be relied upon to consistently measure the same variable so that the measurement results can be trusted and repeated with similar results. Researchers use reliable testing to

assess the consistency of variables and data. In this study, instrument reliability was measured by various methods, namely McDonald's, Cronbach's, Guttman's 2, and Guttman's 6. Given that the results of the previous EFA analysis showed that the visual perception instrument of children with intellectual disabilities had two factors, the reliability test was carried out twice according to the number of factors. The following is a instrument reliability factor 1 which is presented in Table 3.

Table 3. Instrument Reliability Factor 1

Estimate	McDonald's ω	Cronbach's α	Guttman's λ2	Guttman's λ6	Average interitem Correlation
Point estimate	0.884	0.871	0.881	0.866	0.528
95% CI lower bound	0.833	0.808	0.833	0.830	0.417
95% CI upper bound	0.934	0.917	0.923	0.947	0.659

Based on the Table 3, McDonald's method has a reliability value of 0.884, Cronbach's 0.871, Guttman's 2 0.881, and Guttman's 6 0.866. according to the reliability criteria, if the value is >0.8, it is considered very reliable. All reliable test methods have SEM (Standard Error of Measurement) greater than 0.8. Therefore, all items in factor 1 have a very high level of reliability. The following is a instrument reliability factor 2 which is presented in Table 4.

Table 4. Instrument Reliability Factor 2

Estimate	McDonald's ω	Cronbach's α	Guttman's λ2	Guttman's λ6	Average interitem Correlation
Point estimate	0.782	0.777	0.779	0.709	0.549
95% CI lower bound	0.676	0.646	0.593	0.513	0.315
95% CI upper bound	0.889	0.865	0.904	0.891	0.779

Based on the Table 4, McDonald's method has a reliability value of 0.782, Cronbach's 0.777, Guttman's 2 0.779, and Guttman's 6 0.709. according to the reliability criteria, it is considered reliable if the value is >0.7. All reliable test methods have SEM (Standard Error of Measurement) greater than 0.7. Therefore, all items in factor 2 have a high level of reliability. The results of the grind of final instruments are presented in Table 5.

Tabel 5. Grids of Visual Perception Instruments for Children with Intellectual Disabilities Integration of Gestalt Theory

Statement Indicator	Item Code	
	Factor 1	Factor 2
Grouping objects in a drawing that are close together	P1	
Identifies scattered or adjacent objects in a picture	P2	
Identifies incomplete objects in a picture	Q1	
Measuring objects that are only partially visible in a drawing	Q2	
Draws a line that follows the continuity pattern in the picture	R1	
Continue the line in the picture even if there is a cutout	R2	
Group objects that have similar colors in the picture		S1
Identifies images that are similar in size in a drawing		S2
Centering attention on salient elements in an image		T1
Determining the main object in the accompanying image and distinguishing it from the background		T2

Discussion

The developed instrument has great potential to help teachers and educational practitioners better understand the visual perception of children with intellectual disabilities (Al-Dababneh & Al-Zboon, 2022; Misciagna, 2022). Content validity and reliability analyses of the instrument yielded results that support the

feasibility and reliability of the instrument. As a first step, Aiken's V analysis showed that all items in the instrument had adequate validity values, indicating that the instrument substantially reflects the concepts being measured and the reliability of the instrument was strengthened by Cronbach's Alpha analysis, which yielded high internal consistency values, thus indicating the instrument has a good level of reliability and can be relied upon to measure the visual perception abilities of children with intellectual disabilities. Interpretation of the results of the exploratory factor analysis indicated two main factors underlying the constructs of the instrument. These factors are linked to the principles of Gestalt theory, which has underpinned the development of the visual perception instrument for children with intellectual disabilities. The first factor consists of Proximity, Closure, and Continuity, and the second factor consists of Similarity and Figure-Ground by providing a more detailed understanding of children's ability to organize and process visual information (Ingvild Finsrud Helene A. Nissen-Lie & Ulvenes, 2022; Tavakol & Wetzel, 2020).

Factor loading analysis is also an indicator of item validity (Manzar et al., 2021; Rasool et al., 2021). Most items show factor loading above 0.5, indicating that the items are valid in measuring the construct. Only one item, T2, was declared invalid because it had a factor loading below 0.5. The results of model fit analysis using Root Mean Square Error of Approximation (RMSE) and Tucker-Lewis Index (TLI) indicate that the instrument fits the data well. The RMSE values were within the acceptable range, between 0.05 to 0.08, indicating model fit. The TLI value exceeds the threshold of 0.90, indicating that the model "fits" the data. The high TLI value of 1.006 indicates that the model "fits very well." Instrument reliability measures the extent to which the instrument consistently measures the same variable (Amirrudin et al., 2020; Chow et al., 2020). Reliability analysis used various methods, such as McDonald's ω, Cronbach's α, Guttman's λ2, and Guttman's λ6, to measure the reliability of this instrument. Reliability measurements were conducted separately for the two factors identified in the previous EFA analysis. Based on the results of the instrument reliability analysis for Factor 1, McDonald's ω method had a reliability value of 0.884, Cronbach's α of 0.871, Guttman's λ2 of 0.881, and Guttman's λ6 of 0.866. These methods have reliability values that exceed the 0.8 threshold, indicating a high-reliability level. In addition, all reliability testing methods have a Standard Error of Measurement (SEM) greater than 0.8, confirming a very high level of reliability. Thus, it can be concluded that all items in Factor 1 have a very high level of reliability, and the instrument is reliable in measuring the relevant variables.

Moreover, in Factor 2, the reliability analysis results show that McDonald's ω method has a reliability value of 0.782, Cronbach's α of 0.777, Guttman's λ2 of 0.779, and Guttman's λ6 of 0.709. Although the reliability of all methods still exceeds the threshold of 0.7, the reliability level of Factor 2 is slightly lower than that of Factor 1. This suggests that Factor 2 may have a higher degree of variability in measurement. This indicates that the instrument model adequately describes the underlying factorial structure and fits well with the observational data. An in-depth approach to Gestalt concepts in a population of children with intellectual disabilities was used, which has not been specifically tested before. This research enriches our understanding of how Gestalt theory concepts can be integrated into developing assessment instruments for children with intellectual disabilities. The importance of using standardized evaluation tools to assess the visual perception of children with intellectual disabilities in order to increase the effectiveness in designing intervention programs to reduce these behaviors (Distefano et al., 2020; Hassiotis & Rudra, 2022; Reyes-Martín et al., 2022). Proper assessment and training in visual perception can help identify and address limitations in visual perception, ultimately supporting students' learning and academics, (Giaouri et al., 2020; Patel et al., 2020). Integrating Gestalt theory into assessment instruments and educational programs can improve the learning experience of children with intellectual disabilities in visual content and reading (Liang, 2018; Spencer & Kruse, 2021).

The integration of Gestalt theory in instrument development makes an essential contribution to understanding the visual perception processes of children with intellectual disabilities. Gestalt concepts provide a robust framework for designing assessment tasks that address how these children organize and process visual information. Therefore, this instrument not only provides information on the visual perception abilities of children with intellectual disabilities but also provides an in-depth understanding of how they perceive and respond to the visual world around them. The importance of identifying children through early assessment reflects a strategic move to provide robust evidence of developmental processes and provides a basis for designing effective intervention methods. Previous research has gathered evidence to support the principles of Gestalt Theory in developing visual perception assessment instruments for children with intellectual disabilities to support earlier findings that children with intellectual disabilities face difficulties in processing visual information and face challenges (Țîrlea & Abrudan, 2020; Yuniarti et al., 2023). This research fills the knowledge gap by designing an assessment instrument that explicitly measures the visual perception abilities of children with intellectual disabilities. The success of this instrument in achieving high validity and reliability significantly contributes to the literature and learning

practice. This instrument can be a valuable tool for teachers and particular education practitioners to identify needs and design appropriate intervention programs.

By understanding more about the visual perception processes of children with intellectual disabilities, we can more effectively support their skill development, a solid scientific foundation for targeted intervention approaches, and improved learning experiences. The findings of this study possess broad applicability and can be effectively implemented in various educational settings, encompassing both inclusive schools and special education institutions. Educators, including teachers and specialists in exceptional education, can employ this instrument to discern, categorize, and respond to the individual needs of children with intellectual disabilities by assessing their visual stimuli. Consistent with common research practices, future investigations could broaden their scope by incorporating a more extensive and diverse sample. Testing the instrument in various contexts and situations would enhance the evaluation of its external validity. Subsequent research endeavors might delve into assessing the effectiveness of the instrument in developing targeted intervention programs to enhance the visual perceptual abilities of children with intellectual disabilities. Taking the integration of the instrument a step further into everyday learning and teaching approaches is essential to ensure its practical application and sustained positive impact on children's developmental progress.

This study emphasizes the significance of standardized evaluation tools in the efficient design of intervention programs. A comprehensive assessment and training in visual perception prove instrumental in addressing limitations, thereby providing substantial support for the learning process. The integration of Gestalt theory into assessment instruments and educational programs goes beyond informing about visual perception abilities; it offers profound insights into how children with intellectual disabilities perceive and respond to the visual world. The comparison of findings with previous research serves to validate the instrument's significant contribution in addressing challenges related to processing visual information. This instrument, explicitly designed to measure visual perception abilities, attains high levels of validity and reliability. Serving as a valuable tool for educators and special education practitioners, it facilitates the identification of needs and the formulation of appropriate interventions. The widespread applicability of the findings across diverse educational settings, ranging from inclusive schools to specialized institutions, underscores its potential impact. While future research could involve a more extensive and diverse sample and assess external validity, the integration of the instrument into everyday teaching approaches holds promise for practical application and sustained positive impacts on children's developmental trajectories.

4. CONCLUSION

The results of this study illustrate that the visual perception test instrument has gone through a series of validation and reliability tests, which are included in the valid and reliable categories. Constructs that are by the principles of Gestalt theory, through Exploratory analysis, consist of two factors formed with the appropriate model. The item fit model analysis results show that this instrument has a good model fit with the data and significant factor loading values. With two factors formed, it provides a deeper understanding of the critical dimensions in visual perception of children with intellectual disabilities. This research makes an essential contribution to the field of education for children with intellectual disabilities, particularly in developing more appropriate and relevant visual perception assessment instruments. This instrument can assist teachers and educational practitioners identify the needs of children with intellectual disabilities in visual information processing to design more appropriate and effective intervention programs.

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