# Development of Multisectoral Evaluation Scale Instruments in Inclusive Schools

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***Abstract:***. *This study aims to develop an evaluation instrument for multisectoral collaboration between teachers, therapists, and parents in inclusive schools. Collaboration between teachers, therapists, and parents within a multisectoral scheme in inclusive schools currently lacks an evaluation instrument to measure the success of this multisectoral collaboration. Evaluating the effectiveness of multisectoral collaboration in promoting the success of disability programs in schools requires accurate measurement of practices. This requires a valid and reliable measurement instrument based on a conceptual framework, validated in the school context, and with teachers and therapists. This study used a research and development (R&D) approach to develop an evaluation instrument for multisectoral collaboration between teachers, therapists, and parents in inclusive schools. The research consisted of three main stages: introduction, development, and testing. The results of Aiken's V calculation indicate that all items fall within the range of 0.75–0.95, which is considered valid (≥ 0.70). The multisectoral collaboration evaluation instrument, used by teachers, therapists, and parents in inclusive schools, demonstrates good content validity (Aiken's V ≥ 0.75) and high reliability (Cronbach's Alpha ≥ 0.80). In the final model, it can be seen that the Chi-square p-value is above 0.05 (≥ 0.05). This indicates that the model has a good fit, as the parameter fit p-value, Chi-Square, CFI, TLI, RMSEA, and SRMR values are in accordance with established criteria. The development results in a final model that has been tested for validity and reliability, yielding an evaluation scale instrument for multisectoral collaboration among teachers, therapists, and parents in inclusive schools. This instrument can be used to assess the effectiveness of collaboration between teachers, therapists, and parents in providing sustainable service programs tailored to the needs of students with disabilities in inclusive schools.*

***Keywords:*** *evaluation, inclusive schools, instrument, multisectoral*

**Abstrak:** Studi ini bertujuan untuk mengembangkan instrumen evaluasi untuk kolaborasi multisektoral antara guru, terapis, dan orang tua di sekolah inklusif. Kolaborasi antara guru, terapis, dan orang tua dalam skema multisektoral di sekolah inklusif saat ini tidak memiliki instrumen evaluasi untuk mengukur keberhasilan kolaborasi multisektoral ini. Mengevaluasi efektivitas kolaborasi multisektoral dalam mempromosikan keberhasilan program disabilitas di sekolah memerlukan pengukuran praktik yang akurat. Ini memerlukan instrumen pengukuran yang valid dan reliabel berdasarkan kerangka kerja konseptual, divalidasi dalam konteks sekolah, dan dengan guru dan terapis. Studi ini menggunakan pendekatan penelitian dan pengembangan (R&D) untuk mengembangkan instrumen evaluasi untuk kolaborasi multisektoral antara guru, terapis, dan orang tua di sekolah inklusif. Penelitian ini terdiri dari tiga tahap utama: pengenalan, pengembangan, dan pengujian. Hasil perhitungan Aiken's V menunjukkan bahwa semua item berada dalam rentang 0,75–0,95, yang dianggap valid (≥ 0,70). Instrumen evaluasi kolaborasi multisektoral, yang digunakan oleh guru, terapis, dan orang tua di sekolah inklusif, menunjukkan validitas konten yang baik (Aiken's V ≥ 0,75) dan reliabilitas yang tinggi (Cronbach's Alpha ≥ 0,80). Dalam model akhir, dapat dilihat bahwa nilai Chi-square p-value di atas 0,05 (≥ 0,05). Ini menunjukkan bahwa model tersebut memiliki kecocokan yang baik, karena nilai fit p-value parameter, Chi-Square, CFI, TLI, RMSEA, dan nilai SRMR sesuai dengan kriteria yang ditetapkan. Pengembangan menghasilkan model akhir yang telah diuji validitas dan reliabilitasnya, menghasilkan instrumen skala evaluasi untuk kolaborasi multisektoral antara guru, terapis, dan orang tua di sekolah inklusif. Instrumen ini dapat digunakan untuk menilai efektivitas kolaborasi antara guru, terapis, dan orang tua dalam menyediakan program layanan berkelanjutan yang disesuaikan dengan kebutuhan siswa penyandang disabilitas di sekolah inklusif.

**Kata kunci:** evaluasi, instrumen, multisektoral, sekolah inklusi

## 1. INTRODUCTION

In the era of globalization 4.0, collaboration and cooperation within an institution are crucial for the success of program implementation. This also applies in education, where collaboration and cooperation are crucial for providing students with disabilities with an adequate education. Providing education for students with disabilities requires the involvement of various parties, not just schools, but also therapists and ongoing support at home by parents. This inseparable unity is essential for providing quality education for students with disabilities within the concept of inclusive education. Collaboration between teachers, therapists, and parents of students with developmental disabilities is a key element in the success of education for students with disabilities (Klatte et al., 2024). In practice, collaboration appears to be a challenge for teachers, therapists, and parents; multisectoral collaboration refers to the collaboration between these three distinct elements. Collaboration involving teachers, therapists, and parents working to achieve goals for students with disabilities is considered a best practice in inclusive education (Garcia-Melgar et al., 2022). However, various challenges can hinder effective collaboration, potentially limiting children's achievements. Student problems in schools encompass not only academic issues but also non-academic ones (Darmiany et al., 2022). One way to address these issues is through collaboration between teachers, therapists, and parents. The benefit of this collaboration is that the involvement of parents and therapists significantly impacts efforts to minimize non-academic problems experienced by students with disabilities, as it provides services tailored to their needs and barriers (Darmiany et al., 2022). This model will have a direct impact on teachers' ability to support students with disabilities who experience non-academic challenges, enabling them to focus on learning planning. The impact of collaboration between teachers, therapists, and parents is aimed at optimizing student success in school by increasing communication intensity and acting as facilitators (Ishartiwi et al., 2024). Collaboration between teachers, therapists, and parents has been shown to be a crucial factor in the success of rehabilitation for students with disabilities in schools (Kinnunen et al., 2024). There are three types of collaboration between teachers, therapists, and parents: direct collaboration, indirect collaboration, and passive collaboration (Grace & Carlo, 2023). Despite the importance of collaboration between teachers, therapists, and parents, the decision to continue including students with disabilities in mainstream classes still depends on their eligibility for inclusion (Grace & Carlo, 2023).

Parents who actively collaborate with teachers and therapists report increased confidence in supporting the education of students with disabilities at home, which further helps children adapt to the challenges of both environments (Qorib et al., 2024). Collaboration between teachers, therapists, and parents within multisectoral schemes in inclusive schools currently lacks an evaluation instrument to measure the success of this multisectoral collaboration. Evaluating the effectiveness of multisectoral collaboration in promoting the success of disability programs in schools requires accurate measurement of practices (Jeremy et al., 2025). This requires valid and reliable measurement instruments based on a conceptual framework, validated in the school context, and used by teachers and therapists (Ianni et al., 2022). This study aimed to develop an evaluation instrument for multisectoral collaboration between teachers, therapists, and parents in inclusive schools

## 2. RESEARCH METHOD

### 2.1. Research Procedure

This study used a research and development (R&D) approach to develop an evaluation instrument for multisectoral collaboration between teachers, therapists, and parents in inclusive schools. This research consisted of three main stages: preliminary, development, and testing. In the preliminary stage, several journal articles and guidebooks on evaluating multisectoral collaboration between teachers, therapists, and parents in inclusive schools were reviewed. The results provided the dimensions that would be developed into an instrument in the development stage. In the development stage, the multisectoral collaboration evaluation instrument was developed and then subjected to expert validation by four experts from speech therapy, special education, educational management, and psychology. The results of the instrument validation conducted by the experts were analyzed using Aiken's V content validity coefficient criteria, as follows:

**Table 1**. Instrument Validity Criteria

| Value Range | Category |
|---|---|
| 0 ≤ 0,33 | Invalid |
| 0,34 ≤ 0,67 | Quite valid |
| 0,68 ≤ 0,99 | Valid |

(Azwar, 2017, p.117)

In the final stage, after the instrument was validated by experts, researchers conducted field testing with teachers, therapists, and parents at inclusive schools. The results of this testing were used to determine which instrument items fit the theoretical constructs of evaluating multisectoral collaboration between teachers, therapists, and parents in inclusive schools.

### 2.2. Sample

This study used a purposive sampling technique to identify the needs and constraints of multisectoral collaboration between teachers, therapists, and parents in inclusive schools. The sample consisted of 54 individuals, consisting of principals, teachers, parents, and therapists (speech therapists, physiotherapists, and occupational therapists) who had worked in inclusive schools for approximately two years. Detailed demographic data for the study sample are as follows:

**Table 2**. Demographics of the Study Sample

| Variable | Category | Frequency (n = 54) | Percentage (%) |
|---|---|---|---|
| | Foundation Chairperson | 2 | 3,7 % |
| | School Principal | 5 | 5,4 % |
| | Parents | 14 | 25,9 % |
| Position | Inclusive School Teachers | 20 | 37,04 % |
| | Therapists (Speech Therapists, Physiotherapists, and Occupational Therapists) | 13 | 24,1 % |
| Length of work | < 5 years | 12 | 22,2% |
| | 6 – 10 years | 17 | 31,5 |
| | > 10 years | 25 | 46, 3 % |
| Gender | Male | 13 | 24 % |
| | Female | 41 | 76 % |

### 2.3. Data Analysis Technique

The data analysis technique used in this study was JASP 0.95. The statistical analysis used was Confirmatory Factor Analysis (CFA) to confirm whether the indicator variables could be used to confirm a factor (Azwar, 2017, p. 118). This study used CFA evaluation with fit indices to assess the goodness of fit of the data from the CFA. The fit criteria were classified into absolute fit indices, comparative or incremental fit indices, and parsimony.

## 3. RESULT AND DISCUSSION

The instrument analysis results consisted of 18 questions designed to gather information on the needs and constraints of multisectoral collaboration among teachers, therapists, and parents in inclusive schools. These questions encompass six dimensions: human resources/therapist staff, facilities and infrastructure, collaboration and coordination, parent involvement, policies and financial support, and understanding and knowledge. Before being distributed to the field, the instrument items underwent validation testing by four experts from the fields of speech therapy, special education, educational management, and psychology.

**Table 3**. Aiken's V Results

| Item | Expert1 | Expert2 | Expert3 | Expert4 | Aiken_V |
|------|---------|---------|---------|---------|---------|
| I1 | 5 | 4 | 5 | 5 | 0,938 |
| I2 | 3 | 5 | 5 | 4 | 0,812 |
| I3 | 5 | 4 | 5 | 4 | 0,875 |
| I4 | 3 | 4 | 5 | 4 | 0,75 |
| I5 | 3 | 5 | 3 | 4 | 0,688 |
| I6 | 5 | 4 | 3 | 3 | 0,688 |
| I7 | 3 | 3 | 4 | 5 | 0,688 |
| I8 | 3 | 5 | 3 | 3 | 0,625 |
| I9 | 4 | 3 | 4 | 3 | 0,625 |
| I10 | 3 | 3 | 5 | 4 | 0,688 |
| I11 | 4 | 5 | 5 | 5 | 0,938 |
| I12 | 4 | 3 | 3 | 5 | 0,688 |
| I13 | 4 | 3 | 5 | 5 | 0,812 |
| I14 | 5 | 5 | 4 | 5 | 0,938 |
| I15 | 3 | 4 | 3 | 5 | 0,688 |
| I16 | 3 | 5 | 4 | 5 | 0,812 |
| I17 | 3 | 5 | 5 | 3 | 0,75 |
| I18 | 5 | 4 | 5 | 4 | 0,875 |

Content validation was conducted by involving 4 experts using a scale of 1–5. The results of Aiken's V calculation showed that all items fell within the range of 0.75–0.95, indicating validity ($\geq 0.70$). The multisectoral collaboration evaluation instrument, used by teachers, therapists, and parents in inclusive schools, demonstrated good content validity (Aiken's V $\geq 0.75$) and high reliability (Cronbach's Alpha $\geq 0.80$). These results suggest that the instrument can be used to evaluate the implementation of multisectoral collaboration among teachers, therapists, and parents in inclusive schools. The results of the CFA analysis on the multisectoral collaboration evaluation scale instrument, conducted among teachers, therapists, and parents in inclusive schools, are presented in Table 4. Table 4 shows that, in general, the measurement model is included in the fit category where items have a loading factor $\geq 0.5$.

**Table 4**. Factor loadings

| Factor | Indicator | Std. estimate | Std. Error | z-value | p | 95% Confidence Interval | |
|--------|-----------|---------------|------------|---------|---|-------|-------|
| | | | | | | Lower | Upper |
| Human Resources/Therapist Staff | I1 | 0.75 | 0.10 | 7.89 | < .01 | 0.56 | 0.94 |
| | I2 | 0.83 | 0.09 | 9.11 | < .01 | 0.65 | 1.01 |
| | I3 | 0.61 | 0.11 | 5.58 | < .01 | 0.39 | 0.82 |
| Facilities and Infrastructure | I4 | 0.61 | 0.10 | 6.01 | < .01 | 0.41 | 0.81 |
| | I5 | 0.88 | 0.08 | 11.05 | < .01 | 0.72 | 1.03 |
| | I6 | 0.79 | 0.08 | 9.34 | < .01 | 0.62 | 0.95 |
| Collaboration & Coordination | I7 | 0.68 | 0.10 | 6.62 | < .01 | 0.48 | 0.88 |
| | I8 | 0.78 | 0.10 | 8.21 | < .01 | 0.59 | 0.97 |
| | I9 | 0.73 | 0.10 | 7.36 | < .01 | 0.53 | 0.92 |
| Parental Involvement | I10 | 0.71 | 0.09 | 7.84 | < .01 | 0.53 | 0.89 |
| | I11 | 0.84 | 0.08 | 10.86 | < .01 | 0.69 | 0.99 |
| | I12 | 0.71 | 0.09 | 7.76 | < .01 | 0.53 | 0.88 |

**Table 4**. Factor loadings

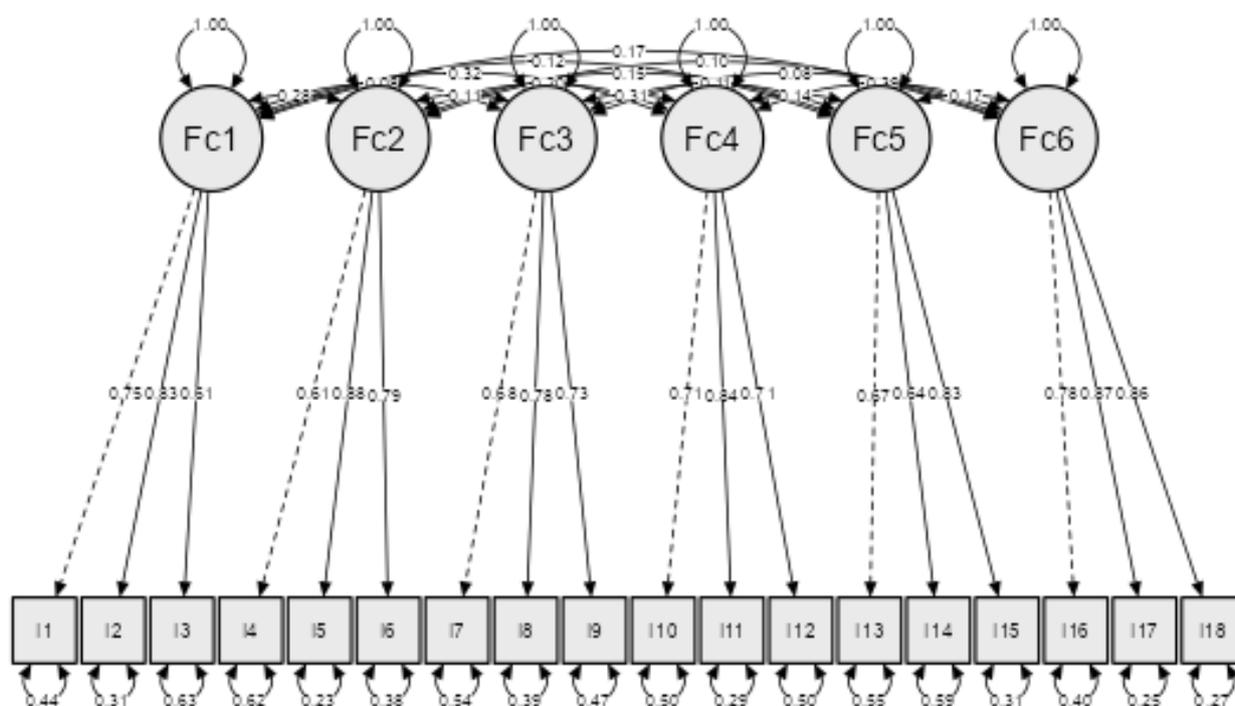| Factor | Indicator | Std. estimate | Std. Error | z-value | p | 95% Confidence Interval | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Upper |
| Policies & Financial Support | I13 | 0.67 | 0.11 | 6.23 | < .01 | 0.46 | 0.88 |
| | I14 | 0.64 | 0.11 | 5.85 | < .01 | 0.43 | 0.86 |
| | I15 | 0.83 | 0.10 | 8.12 | < .01 | 0.63 | 1.03 |
| Understanding & Knowledge | I16 | 0.78 | 0.07 | 11.32 | < .01 | 0.64 | 0.91 |
| | I17 | 0.87 | 0.06 | 15.42 | < .01 | 0.76 | 0.98 |
| | I18 | 0.86 | 0.06 | 15.00 | < .01 | 0.74 | 0.97 |



**Figure 1**. Multisectoral Collaboration Evaluation Instrument Model

The final model shows that the Chi-square p-value is greater than or equal to 0.05 ($p \geq 0.05$). This indicates a good fit. The fit parameters (p-value, Chi-square, CFI, TLI, RMSEA, and SRMR) meet the criteria set out in Table 5. This final model is a good fit, meaning that the proposed model aligns well with the empirical data. The complete model and loading factors for each item in the final model are shown in Figure 1.

**Table 5.** Multisectoral Evaluation Scale Instruments

| Fit parameters | Fit Criteria | Output | Criteria |
|---|---|---|---|
| Chi-Square | p > 0.05 | 0.17 | Fit |
| CFI | > 0.90 | 0.95 | Fit |
| TLI | > 0.90 | 0.94 | Fit |
| RMSEA | < 0.08 | 0.05 | Fit |
| SRMR | < 0.08 | 0.07 | Fit |

Based on the development results, the instrument used for evaluation was proven to be valid. Evaluation is a comprehensive and multidimensional process used to identify disabilities and the need for special education services. It is not simply an academic test, but a systematic process (Maki & Adams, 2022). This instrument is very useful for determining the extent of multisectoral collaboration across professions in caring for children with special needs. This aligns with research by Castro-Kemp & Samuels (2022), which states that collaborative practice requires several important roles, including the role of higher education in expanding transdisciplinary practices to build partnerships among the health, education, and social sectors as part of the professional training curriculum. Furthermore, schools play a key role as centers for interdisciplinary collaboration, and professional attitudes and personal competencies, namely the individual's ability to develop professional values, attitudes, and skills that foster effective collaboration, are crucial.

Cross-professional collaboration is a crucial aspect in providing services to students with disabilities. A comprehensive evaluation encompassing communication, knowledge, roles, and culture is crucial. This allows us to assess barriers to two-way communication, identify parents' information needs regarding rehabilitation programs and child diagnosis, evaluate the roles of various professionals, including parents, to prevent ambiguity and overlap, and examine the cultural and social backgrounds that can influence the effectiveness of collaboration (Styczen et al., 2024).

Conducting evaluations related to multisectoral collaboration can influence subsequent program planning. Research by Azad et al. (2021) explains that collaboration between community health service providers, such as therapists, psychologists, and pediatricians, with school service providers is a crucial approach to addressing the needs of children with autism spectrum disorder. Evaluations can identify the frequency of collaboration, the diversity and inclusiveness of professionals within the team, systemic factors and organizational policies, collaborative competencies, leadership support, and professional capacity development needs.

Thus, evaluation of the implementation of multisectoral collaboration in providing services to students with disabilities must be carried out to measure the effectiveness of collaboration, so that services for students with disabilities can be implemented optimally according to the needs of students with disabilities, so that the development of evaluation measurement tools is crucial because service decisions for children with special needs must be based on valid, reliable, and context-relevant instruments so that the assessment of the feasibility, needs, and effectiveness of interventions is truly accurate and fair.

## 4. CONCLUSION

A comprehensive evaluation is needed to measure the program's effectiveness, including its multisectoral collaboration in caring for children with special needs. The development results in a final model that has been tested for validity and reliability, yielding an evaluation scale instrument for multisectoral collaboration among teachers, therapists, and parents in inclusive schools. This instrument can be used to assess the effectiveness of collaboration between teachers, therapists, and parents in providing sustainable service programs tailored to the needs of students with disabilities in inclusive schools.

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