

USING TREND LINE DATA TO PLAN AND EVALUATE LITERACY INSTRUCTION

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Abstract. The use of the split-middle line of progress, trend line, to measure teacher effectiveness in the literacy field is discussed. Three case studies are presented to illustrate the use of trend lines in evaluating best practices in providing effective literacy instruction for students in elementary classrooms. Initiating interactive dialogue and shared reading responses are the two strategies used to represent the probability of performance change in planning literacy lesson instruction. This discussion is an innovative use in the literacy field of observational data recording that graphically demonstrates inclining and declining confirmed effect and interpretive probability. The authors' intentions are to challenge educators to more closely examine graphic representation or reflect upon the frequency of use and effectiveness of reading strategies that may improve reading performance in literacy settings.

Keywords: evaluation, elementary, reading, literacy, classroom teacher

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Dutch

[Translation Tanja Janssen]

TITEL. Het gebruik van trendlijn gegevens voor het plannen en evalueren van taalonderwijs

SAMENVATTING. Het gebruik van de split-midden lijn van vooruitgang, de 'trend line', voor het meten van de effectiviteit van leerkrachten in het taalonderwijs wordt besproken. Drie casestudies worden gepresenteerd om het gebruik van trend lines te illustreren bij het evalueren van effectief taalonderwijs voor leerlingen in het basisonderwijs. Het initiëren van interactieve dialogen en uitwisseling van leesreacties zijn de twee strategieën die gebruikt zijn om de waarschijnlijkheid van verandering in het plannen van taallessen te representeren. De bespreking is een innovatief gebruik van observatie gegevens waarbij grafisch een toenemend of afnemend effect wordt getoond. Leraren worden uitgedaagd om grafische representaties preciezer te bekijken of te reflecteren op de frequentie en effectiviteit van leesstrategieën die de leesvaardigheid kunnen verbeteren in taallessen.

TREFWOORDEN: leraar, basisonderwijs, evaluatie, taal, lezen

Greek

[Translation by Panatoya Papoulia Tzelepi]

Τίτλος: Χρησιμοποιώντας δεδομένα από τη Γραμμή Τάσης για το σχεδιασμό και την αξιολόγηση της διδασκαλίας του γραμματισμού.

Περίληψη: Συζητείται η χρήση της χωρισμένης στη μέση γραμμής προόδου, η γραμμή τάσης για να μετρηθεί η αποτελεσματικότητα του δασκάλου στο πεδίο του γραμματισμού. Τρεις μελέτες περίπτωσης παρουσιάζονται για να δείξουν τη γραμμή τάσης στην αξιολόγηση άριστων πρακτικών στην παροχή αποτελεσματικής διδασκαλίας γραμματισμού στο πρωτοβάθμιο σχολείο. Ο διαδραστικός διάλογος και η αντίδραση στην κοινή ανάγνωση είναι δύο στρατηγικές που χρησιμοποιήθηκαν για να δείξουν την πιθανότητα αλλαγής συμπεριφοράς στο σχεδιασμό μαθήματος γραμματισμού. Αυτή η συζήτηση είναι καινοτομική χρήση στο πεδίο του γραμματισμού των δεδομένων παρατήρησης που δείχνουν γραφικά τα καθοδικά ή ανοδικά αποτελέσματα. Η πρόθεση των συγγραφέων είναι να παρακινήσουν τους εκπαιδευτικούς να εξετάσουν πιο προσεκτικά γραφικές αναπαραστάσεις και να αναστοχαστούν ως προς τη συχνότητα χρήσης και την αποτελεσματικότητα των στρατηγικών ανάγνωσης οι οποίες θα μπορούσαν να βελτιώσουν την αναγνωστική ικανότητα σε περιβάλλοντα γραμματισμού.

Λέξεις κλειδιά: Δάσκαλος τάξης, πρωτοβάθμιο σχολείο, αξιολόγηση, γραμματισμός, ανάγνωση

Italian

[Translation Manuela Delfino, Francesco Caviglia]

TITOLO. L'uso di dati sulla linea di tendenza per progettare e valutare la didattica della lettura e scrittura
SINTESI. L'articolo discute l'uso della linea di tendenza per misurare l'efficacia dell'insegnamento nell'area della lettura e scrittura. Sono qui presentati tre studi di caso volti a illustrare l'utilizzo di linee di tendenza nel valutare le migliori pratiche di didattica di lettura e scrittura per studenti delle classi elementari. Iniziare un dialogo interattivo e condividere risposte alla lettura sono le due strategie utilizzate per rappresentare la probabilità di un cambiamento nella capacità di pianificare la didattica di lettura e scrittura. Questa discussione propone un uso innovativo, nel campo della didattica di lettura e scrittura, della registrazione di dati derivati dall'osservazione per dimostrare graficamente effetti confermati di miglioramento o peggioramento e possibili interpretazioni. È intenzione degli autori esortare gli educatori a esaminare con maggior attenzione le rappresentazioni grafiche o riflettere sulla frequenza dell'uso e dell'efficacia di strategie di lettura in grado di migliorare le prestazioni in lettura nell'ambito della didattica di lettura e scrittura.

PAROLE CHIAVE: insegnante di classe, scuola primaria, valutazione, literacy, didattica di lettura e scrittura, lettura

Polish

[Translation Elżbieta Awramiuk]

TITUŁ. Wykorzystanie linii trendu w planowaniu i ewaluacji nauki czytania i pisania

STRESZCZENIE. Artykuł omawia wykorzystanie linii średniego postępu, linii trendu, do pomiaru efektywności działań nauczycieli w nauczaniu czytania i pisania. Zaprezentowano w nim trzy studia przypadków ilustrujące wykorzystanie linii trendu do określenia najlepszych praktyk we wdrażaniu efektywnych metod kształcenia czytania i pisanie uczniów na poziomie wczesnoszkolnym. Do zaprezentowania prawdopodobieństwa zmiany wyników planowanej lekcji czytania i pisanie wykorzystano dwie strategie: inicjowanie interaktywnego dialogu i wspólne reakcje czytelnice. Artykuł

przedstawia innowacyjne na gruncie kształcenia umiejętności czytania i pisanie wykorzystanie zarejestrowanych danych, które graficznie ilustrują potwierdzoną zmianę wyniku oraz prawdopodobieństwo zajścia tej zmiany. Intencją autorów jest skłonienie nauczycieli do dokładniejszej analizy graficznej reprezentacji lub refleksji nad częstotliwością stosowania i efektywnością strategii czytania, które mogą poprawić tę umiejętność.

SŁOWA-KLUCZE: nauczyciel szkolny, nauczanie początkowe, ewaluacja, umiejętność czytania i pisanie, czytanie

Spanish

[Translation Isabel Martinez-Alvarez]

TÍTULO. El uso de tendencias de líneas de datos para planear y evaluar la instrucción de la alfabetización.

RESUMEN. El uso de línea de fracción de media del progreso, línea de tendencia, se discute para medir la efectividad del profesor en el campo de la alfabetización. Se presentan tres estudios de caso para ilustrar el uso de las líneas de tendencia en la evaluación de las mejores prácticas para proporcionar una instrucción de alfabetización eficaz para los estudiantes de primaria. Las dos estrategias usadas para representar la probabilidad de cambio de actuación en la planificación de la instrucción de la lección de alfabetización fueron las respuestas de iniciación de diálogo interactivo y la lectura compartida. Esta discusión supone un uso innovador en el campo de la alfabetización de la grabación de datos observacionales que demuestra gráficamente el aumento y el declive del efecto confirmado y de la probabilidad interpretativa. Las intenciones de los autores son retar a los educadores a examinar más detenidamente la representación gráfica o reflexionar sobre la frecuencia de uso y la efectividad de las estrategias de lectura que pueden mejorar la ejecución de la lectura en escenarios de alfabetización.

PALABRAS CLAVE: profesor de clase, primaria, evaluación, alfabetización, lectura

Turkish

[Translation Burak Sunguralp Tekin]

BAŞLIK. Okuma-yazma eğitimini planlamada ve değerlendirmede eğitim çizgisi verilerini kullanma

ÖZET. Okuma-yazma alanında öğretmenin etkililiğini ölçmek için gelişim eğitim çizgisi kullanımı ele alınmaktadır. Üç durum çalışması, ilköğretim çağındaki çocuklara etkili okuma-yazma eğitimi sunarken kullanılan başarılı yöntemleri değerlendirmede eğitim çizgilerinin kullanımını göstermek için sunulmaktadır. İnteraktif diyalogları başlatma ve ortak okuma cevapları okuma-yazma dersi eğitiminin planlanmasında performans değişikliği ihtimalini temsil etmek için kullanılan iki stratejidir. Bu tartışma, okuma-yazma alanında eğitim ve sapma etkilerini ve ihtimallerini grafiksel olarak gösteren gözlemsel veri kaydında yenilikçi bir kullanımdır. Yazarların amacı eğitimcileri grafikleri daha yakından incelemeye davet etmek ve onların okuma-yazma ortamlarında okuma performansı geliştirebilecek okuma stratejilerinin etkililiği ve kullanım sıklığı üzerine daha fazla düşüncelerini sağlamaktır.

ANAHTAR KELİMELER: sınıf öğretmeni, ilkökul, değerlendirme, okuma-yazma, okuma

1. USING TREND LINE DATA TO PLAN AND EVALUATE LITERACY INSTRUCTION

As response to intervention (RTI) gains popularity within elementary schools, one of the most critical issues facing classroom teachers is how their instructional practices can meet the needs of every child in the classroom. The evaluation of the best instructional practices through baseline data presented graphically provides a viable avenue for teachers to monitor their use of instructional techniques as exemplified with the measurement of student behavior. For example, progress can be measured through various observational methods from the initial performance level to the desired skill level with a research design such as Smith's (1979) baseline and intervention observational study to verify the effects of three instructional interventions (modeling, correction, and previewing) to increase a student's appropriate oral reading with fewer word recognition errors. Studies such as Smith's provide a means to record the modeling, correction, and previewing of events that occur so that progress can be graphically charted to determine what, if any, progress has been made by the students.

The primary purpose of this discussion is to explore the premise that trend line data can also monitor teacher performance that will assist teachers in providing effective instruction as postulated by Alberto and Troutman (2008). Three case studies are provided that describe applications with which classroom teachers can use trend line data.

Providing effective literacy instruction to children is crucial, and evaluating teacher performance is essential. The authors' premise is that trend line data provides an additional tool in achieving that goal. In an effort to expand the knowledge base in evaluating teacher performance towards providing effective literacy instruction, an explication of the split-middle line of progress (trend line) will be described and demonstrated with a model of a student's observed behavioral change. Secondly, the measurement of teacher performance is exemplified within three instructional literacy settings of the teacher's use of interactive dialogue and shared reading response techniques; a lesson design originating from the shared reading response technique will be also be presented.

2. TREND LINE METHOD

The split-middle line of progress, trend line measurement, has been used for interpretive analysis in classroom settings for at least the past three decades (Alberto & Troutman, 2008; Barlow & Hersen, 2008). A series of lines can be set into two equal parts (parameters) per baseline phase. Second, another line is drawn connecting the midpoints of each section to create the quarter-intersect line of progress, also known as the split-middle line of progress. To evaluate changes across phases (i.e., from the baseline phase to the treatment phase), the split-middle line of progress and the mean line based on each baseline condition are drawn on each of the subsequent treatment phases (Meany-Daboul, Roscoe, Bourret, & Ahearn, 2006).

For the purpose of this study, data points indicate if behavior falls above or below the baseline and criterion lines and in turn, visually represent the lasting effect of an intervention.

The process has measured the predictability of special needs students' behavioral performance and changes as behavioral management interventions were implemented. Analyzing the split-middle line of progress indicates the frequency of events and the positive or negative type of change over time. The relationship of that change and the desired task-oriented performance may be successful or unsuccessful. Alberto and Troutman (2008) report that data collection and interpretive processes confirm the effectiveness of using specific interventions to change inappropriate student learning behavior in single-subject research designs as well as trend line measurement. The visual inspection of observational data graphics reveals three interrelated factors: (a) The *effectiveness* of behavioral interventions as catalysts of change; (b) The *degree* of the student's progress throughout behavioral performance; and (c) The *trends* in maintaining over time the use of instructional methods for effective change (Alberto & Troutman, 2008). As early as 1982, Kazidin and Tuma suggested the use of a single-case research design with continuous examination of teacher performance over time with visual data.

Data related to learning behavior are invaluable to teachers seeking to relate a student's performance to a particular instructional design. If the match of the student's performance to the instructional interventions inclines or declines in a stable direction for three recorded data points (Barlow & Hersen, 2008), then it is possible to predict whether or not learning has occurred. The graphic representation (declining or inclining data points and lines) of the positive or negative effect would denote the existing learned behavior. Depending on the observational data for event recording, the desired effects of inappropriate behavior would be revealed by a declining line of progress; whereas, an appropriate behavior would be indicated by an inclining line of progress.

3. DATA RECORDING PROCESS

A line drawn from the baseline data points of pre-observation, intervention, and the post-observation graphically represents student performance levels and serves as a predictor (trend line) of future behavior. Alberto and Troutman (2008) suggest the *quarter-intersect method* for determining the split-middle line of progress (the trend line) to demonstrate the direction of change (inclining and declining as an "equal number of data points fall on-and-above the line as fall on-and-below the line" (p. 190). The quarter-intersect method separates an 11-day data chart on days 3.5; 6; and 8.5.

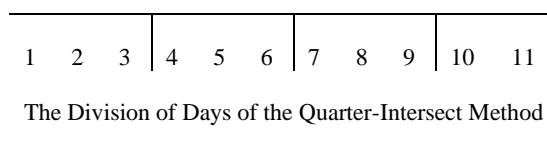


Figure 1. Quarter-intersect method.

Hypothetical case: Special needs student

The trend line method is illustrated in this way: The off-task behavior of a student could have been observed for 11 days. A graph is created showing the observed learning behavior each day. Since observations took place over an odd number of days, day 6 is the midpoint of the observation period, dividing the 11 days with 5 days on each side of the midpoint. The 6 days are subdivided at days 3.5 and 8.5. The quarter-intersect method separates the data on days 3.5, 6, and 8.5.

The quarter-intersect method and the split-middle line of progress (trend line) for the 11 observation days show a decline in off-task behaviors.

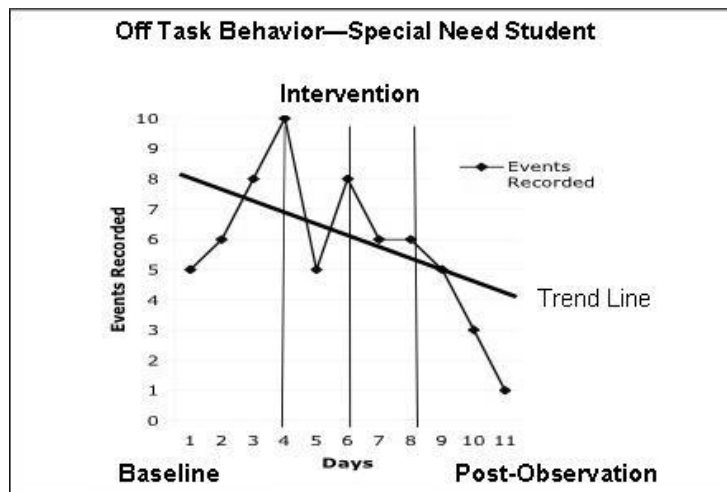


Figure 2. Trend line decline.

Each incidence of off-task behavior was recorded using a checklist that was later entered into an electronic database before being visually represented on the trend line. This decline was the desired performance. The decline (day 1, 5 pts. to day 11, 1 pt.) indicated by finding the quarter-intersect of the day 3.5 (7 pts.) then repeating the process for the quarter-intersect of the day 8.5 (5.5 pts.). The trend line is then drawn through the midpoints as shown graphically in Figure 2. The quarter-intersect lines have 3 data points on each side and a 2.5 decline between the lines. The split-middle line of progress (trend line) has 5 data points above and below.

4. TREND LINE ADAPTATION: TEACHER EFFECTIVENESS

The split-middle line of progress (trend line) may be adapted to measure or confirm the effect of a teacher using a specific instructional method or technique. By pairing the use of reading instructional methods within the literacy setting with the split-middle line of progress, the *effectiveness of teacher performance* may be analyzed and interpreted in graphic representation. The interaction between teacher and stu-

dent(s) may be explored through the use of observation and the recording of events, and then graphically represented by the split middle line of progress that denotes teacher performance.

4.2 The literacy setting

The instructional method of talking to, with, and by students instills the idea that interactive dialogue is important, even in collaborative writing where students, teachers, and peers discuss compositions (Reutzel & Cooter, 2012). Shannon (1990) reported that in the late 19th century Francis W. Parker challenged teachers to “talk with a pencil,” which was the forerunner of journal writing, and emphasized the functional use of words in context through narrative writing. Teachers are encouraged in today’s classroom to move from a lecture setting with little or no interactive dialogue with the students to interactive discussions, predictions, student-generated questioning, student responses as text, inferences, higher order thinking skills, and discovery lessons.

In the lesson segments (pre-, during-, and post-reading), teachers may currently stress meaning and interpretive responses in the following diverse methods: questioning, prompting, summarizing, rereading, relating connections to meaningful experiences, retelling, and student-centered responses. Cunningham (2004) suggested that we engage children in shared reading and rereading books at school replicating the joy of reading and selection of books at home. Pedagogy has moved toward expanding student-centered instructional techniques that engage students in discussions; therefore, it is crucial to examine strategies such as interactive dialogue to determine their effectiveness.

The exploration of trend lines with a multiple-subject research design to evaluate and predict the teacher’s use of instructional strategies in this research investigation included three instructional techniques (modeling, coaching, and encouragement) during nine days of literacy lessons. Through the observation of five teachers teaching specific literacy lessons, the process of presenting instruction was recorded, and a trend line indicated an incline or decline in the use of the instructional techniques as suggested by Alberto and Troutman (2008).

Findings indicated that the frequency of use in instructional modeling remained unchanged without an incline or decline in number of times used by Mrs. Bright.

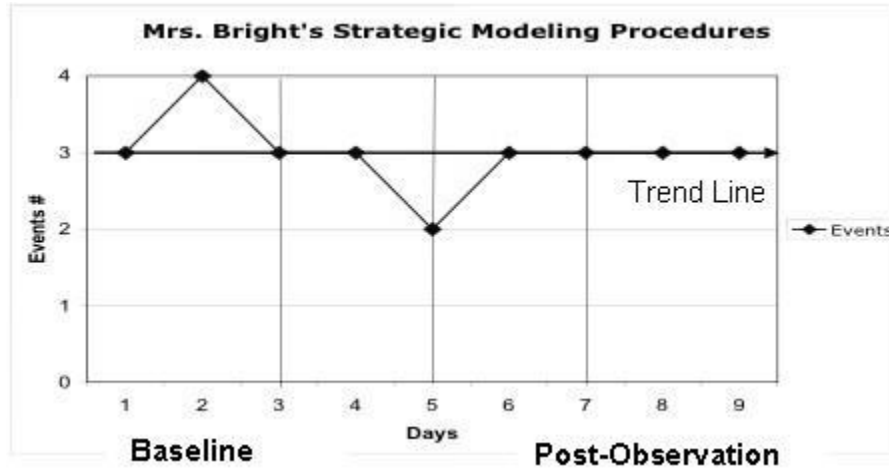


Figure 3. Modeling techniques (trend line).

In analyzing line data, the recorded data points of observed use of modeling techniques should indicate stability of use with three data points in one direct (up for an incline or down for a decline of use). In Figure 3, Modeling Techniques (trend line), the use of trend lines confirms that additional days of observation would be needed to determine the effectiveness of modeling techniques used during literacy lessons in Mrs. Bright's classroom. From days 7 to 9, the final 3 data points are not recorded as an incline or decline in one direction; therefore, Mrs. Bright would need an alternative intervention of modeling techniques and more observation days in order to determine the effectiveness of the intervention. Trends are not single incidents of behavior; they are patterns that reflect ongoing behavior.

5. INTERVENTION

5.1 Model of interactive dialogue frequency and effectiveness

In examining the adaptation of the split-middle line of progress for teacher effectiveness, the researcher may want to explore the following question: How is teacher effectiveness of performance measured to confirm the interactive dialogue effect and predict change over time? The first scenario represents an examination of the use of trend lines to observe a lesson in teaching interactive dialogue.

For this situation in observing Interactive Dialogue, the following two conditions will be examined: (a) The frequency of lesson procedures that initiate students' responses; and (b) The "quality" within types of dialogue that are used as input and immediate feedback. The data collection of the observation period (14 days) occurred using an intervention of modeling scripted lessons by teachers during eight literacy lesson segments. Teachers could be observed initiating discussion in reading

lesson segments (pre-, during-, and post-reading). A checklist could be used to check the teacher's use of interactive dialogue strategies in the reading lesson. For example, (a) Ogle's (1986) active text engagement that connected with students' knowledge before and after reading as in the K-What do I know? W-What do I want to know? L-What did I learn? (KWL); and (b) Students share ideas about a topic prior to reading (brainstorming). Then, the tallies of the interactive dialogue performance would be recorded as data points on observation graphs in order to predict the teachers' use of discussion after the intervention period. The quarter-intersect and split-middle line of progress visually display the performance change representing an incline of data points using interactive dialogue during the observational period.

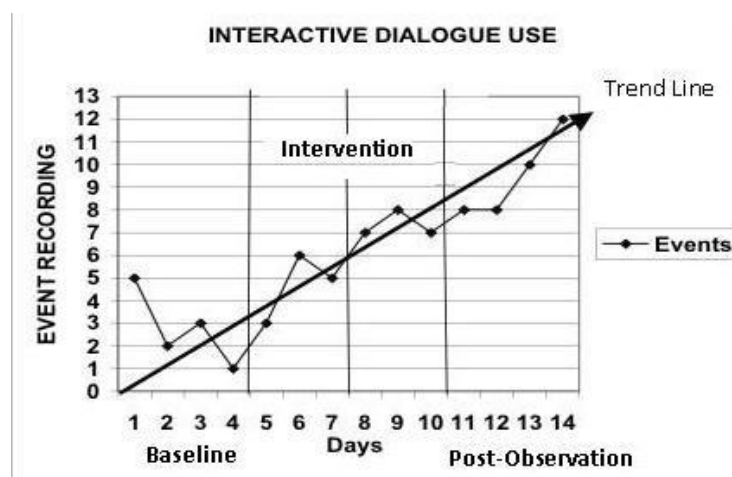


Figure 4. Interactive dialogue incline.

Also, on day 4, interpretations may be concluded, for example, the teacher may have adhered to the dialogue intervention increasing the use on day 5.

Since observations were made over a 14-day period, the mid-point was day 7.5 and the quarter-intersect points were days 4 and 11. The data points were divided evenly into 7 points above and below the split-middle line of progress. The trend line followed the quarter-intersect path on day 4 (1 pt.) and day 11 (8 pts.). The incline indicated that the teacher improved the number of times that interactive dialogue was initiated. The scripted modeling intervention was effective, since interactive dialogue increased 7 data points during the intervention; thereby, increasing the interactive dialogue by 7 points or occurrences (5 pts. to 12 pts.) during the 14 day observational period.

Teachers could be observed initiating discussion in reading lesson segments (pre-, during-, and post-reading) with a checklist being utilized to gather data while observing the reading lesson. Cunningham (2004) suggested that parents and teachers conduct informal conversations (interactive dialogue) with their children about

books. Trend line analysis clearly provides information to teachers enabling them to improve the effectiveness of their instruction such as in this hypothetical scenario.

Furthermore, the ability to analyze interactive dialogue strengthens teachers' abilities to improve instructional quality and the frequency of occurrence in the following strategies:

- 1) Pre-Reading: Draw from Background Experiences
- 2) During Reading: Students in groups read for a purpose and discuss independent reading of texts
- 3) Post-Reading: Peer Conferencing during writer's workshop
- 4) Guided Reading: Modeling, Prompting, Coaching, and Encouragement

Teachers could certainly use trend lines for self-evaluation of their effectiveness and consistency in implementing innovative instructional literacy techniques. Interactive dialogue is only one example of student-centered instruction. Visual inspection of the recorded data points for the teacher's performance level in initiating interactive dialogue from day 1 to day 14 reveals rapid change. The quarter-intersect method for division of the days and the split-middle line of progress (trend line) visually represent the degree of change or the teacher's level of improvement. Three data points in one direction indicate the probability for continuance or maintenance of the higher performance.

5.2 Model of shared reading responses

Another hypothetical scenario involves the strategy of teacher and students sharing stories as a post-reading lesson of *The Mitten: A Ukrainian Folktale* (1989) by Jan Brett through the familiar language experience approach (student talks, teacher writes student's words, and student reads the written words), retelling, and story discussions (shared reading responses). The shared reading response strategy lends itself to analysis using the split-middle line of progress (trend line) to measure teacher effectiveness in the primary grades. The data could be graphically displayed indicating a decline after implementing the intervention of shared reading (i.e., teacher and children track their reading, reread and later use the shared reading-language experience approach).

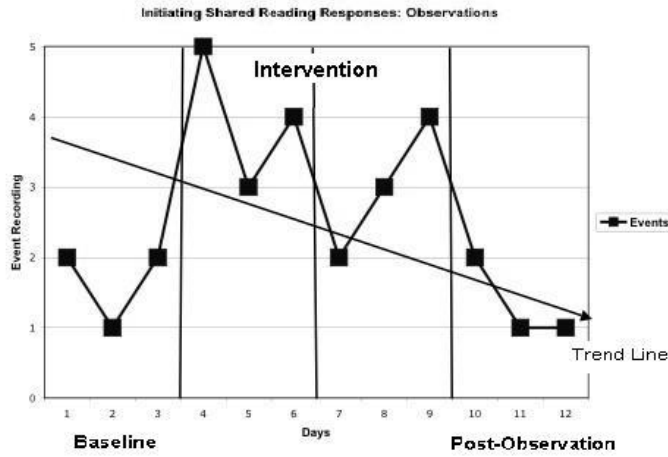


Figure 5. Shared reading response decline.

The criteria for initiating shared reading responses may include predictable charts, pointing and tracking in the story, retellings (Holdaway, 1999), and peer conversations during reading (Rasinski & Padak, 2004). Students reread, gain confidence, and develop whole-to-part conceptual understanding of their interpretive reading schema (Combs, 2005).

Initiating Shared Reading Response techniques are presented in the following example of using types of shared reading responses for daily lessons: (a) Print tracking; (b) Story rereading; (c) Story retelling; (d) Prediction responding; and (e) Peer conversation. The types of shared reading responses during the 12 days of observations are listed, and marked (X) for each day's occurrences of the shared reading responses in Table 1.

Initiating Shared Reading Responses- Data for Lesson Plan Development

Days	1	2	3	4	5	6	7	8	9	10	11	12
(a) Print Tracking	X			X		X		X	X		X	
(b) Story Rereading	X		X	X	X		X		X			
(c) Prediction Responding				X		X		X				
(d) Story Retelling		X		X	X	X	X		X	X		X
(e) Peer Conversation			X	X	X	X		X	X	X		

Table 1. Recorded observational data.

The shared reading response approach in Table 1 is a familiar strategy using several techniques with delightful stories such as *The Mitten: A Ukrainian Folktale*. The techniques from *The Mitten: A Ukrainian Folktale* story represent a shared reading response as shown on Day 1, two shared reading response techniques (print tracking and story rereading) are used, as teacher and students predict the repetitive naming of the animals' order of placement into Nicki's mitten; on Day 2, one technique (story retelling) as students recall the animal names and tell why the animals went into Nicki's mitten; on Day 3, two techniques (story rereading and peer conversation) as students read, match, and discuss vocabulary in the text with the events; on Day 4, the intervention begins with combinations of five techniques (print tracking; story rereading; story retelling; prediction responding; and peer conversation) as students review the story with a partner; on Day 5, three techniques (peer conversation; story retelling; and story rereading) as teacher and students discuss, match animals and names in a pocket chart, and reread to verify the matched names in the story; on Day 6, four techniques (print tracking; story retelling; prediction responding; and peer conversation) as students matched the animal characteristics and sequence details; on Day 7, two techniques (story rereading and story retelling) as students create new characters to replace the story characters and retell looking at the pictures; on Day 8, three techniques (print tracking; prediction responding; and peer conversation) as students draw a picture of their new character, predicting who will come next and discussing the new events with peers; on Day 9, four techniques (print tracking; story rereading; story retelling; and peer conversation) as the students tell the teacher the new events matching the story and the teacher writes the action words for the picture; then the process of print tracking, rereading, and discussing occur with the new pictures, which became a big book story; on Day 10, the intervention stage is finished, two techniques (story retelling and peer conversation) as teacher and students recall and compare other stories with similar plots that are exemplified in *The Hat* (1997) and *The Umbrella* (2004) by Jan Brett; on Day 11, one technique (print tracking); and on Day 12, one technique (prediction responding) as the teacher works with the Big Book made by the students. Combinations of shared reading response techniques are conducted only during the intervention stage. Since the use of the specified strategies occurred, they may need to be expanded or presented at a higher level.

The 12 observation days' decline (2 pts. to 1 pt.) was recorded by finding the quarter-intersect of day 3.5 (3 pts.) and day 9.5 (2 pts). The trend line had 6 data points above and below. The hypothetical decline represents a drop to 1 data point use of shared reading responses. The performance on the days of the intervention, 3.5 to 9.5, was inconsistently higher than the baseline data but declined after the modeling intervention was discontinued. Continued observation days with an alternating intervention design would be needed to definitively evaluate the effectiveness of the shared reading response strategy. The teacher would need more assistance in using the shared reading response strategy. Using trend line data from Table 1 both before and after instruction of *The Mitten: A Ukrainian Folktale* enables the teacher to analyze personal performance and make decisions about using strategic approaches within stories. This multi-strategy checklist allows a teacher to record, analyze, and evaluate a student's total performance of desired reading skills throughout the

unit, providing data from which to make instructional planning in a holistic fashion rather than relying on one's ability to score well on a single test (Ortlieb, Cheek, Bowers, & Grandstaff-Beckers, in press).

6. LESSON PLANNING BASED ON TREND LINE PERFORMANCE

Once teachers have developed a set of effective teaching strategies through introspection and by using analytical/evaluative tools like the split-middle line of progress, this observational tool could be used to plan more effective lessons. A teacher's decision in planning effective reading lessons should address both the need for the reading intervention and the degree of change effected. Reflective inquiry of the following considerations would shape the design of the lesson: Did this intervention work?, Was it worth the effort to implement?, Did it make a difference in my students' learning?, and Does the intervention need to be expanded with more strategies or at higher or lower levels?

Self-reflection by teachers based on trend line data should reinforce the basic tenants of effective teaching which include: planning reading procedures for instruction, procuring the needed resources, using appropriate strategies throughout the reading lesson, seeking more student participation, and improving reading performance.

The split-middle line of progress graphically represents successful and unsuccessful use of implementing instructional strategies when correlated to student learning. To provide more effective instruction, how can teachers use the trend line data to improve their reading lessons? Initially, teachers may need to reflect carefully on the needs of the students in preparing lessons, think about the students' interactive dialogue, compare the progress using the reading resources/strategies, determine the responses causing delays or misunderstandings, and reflect on "just what did occur?" For example, during shared reading, the strategies may not have worked successfully on days when they were not carefully developed prior to the lesson. Teachers may need to conduct a detailed task analysis of procedures for each lesson using combinations of techniques. Writing summaries and anecdotal comments as students share their retellings is another example of effective instruction. Using trend line data encourages best practices towards effective instruction.

7. CONCLUSION

The use of declining or inclining trend line data suggested by Alberto and Troutman (2008), and referred to as the split-middle line of progress method is an additional tool available to teachers in implementing best practices, and providing effective literacy instruction. Clearly, using trend lines for self-reflection and monitoring teacher effectiveness can enhance literacy lesson planning and implementation. Teachers' self-reflection should directly impact the needs of the students by providing a vehicle for teachers to determine the degree of success of their instructional strategies. This information provides the impetus for data-based evaluation and decision making towards impactful literacy instruction.

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