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Content Validity of English Reading Proficiency Checklist (ERPC)

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Abstract. The goal of this study is to conduct a content validation of a researcher-made assessment instrument through expert judgement which investigates phonemic awareness, phonics skills, reading fluency, vocabulary development and reading comprehension of Grade 3 pupils. Content validity index (CVI) content validity ratio (CVR) and Kappa statistic were utilized by the researchers. The content validity index, Kappa statistic and content validity ratio were carried out for content validity. The content of the instrument consist of 5 English Reading components namely, phonemic awareness, phonics skills, reading fluency, vocabulary development and reading comprehension consisting of 30 items each component. The content validation of each item questionnaire was participated by 5 English language experts. The I-CVI or the item content validity index ranged from 0.6 to 1 and (SCVI/Ave) or scale content validity index ranged from 0.76 to 091. This instrument bridges the continuous problem and challenges of low reading literacy skills of children in Philippine educational setting.
Keywords: *English reading proficiency, Grade 3 pupils, content validity index, content validity ratio, kappa statistics*

Introduction

Reading proficiency is a foundational skill crucial for academic success and lifelong learning (Snow, Burns, & Griffin, 1998). As educational landscapes evolve, the demand for effective tools to assess and enhance reading abilities becomes increasingly critical. This study addresses this need through the development of the "English Reading Proficiency Checklist."

Research spanning from 2018 to 2023 underscores the multifaceted nature of reading, highlighting key dimensions such as phonemic awareness, phonics, fluency, vocabulary, and comprehension (Castles, Rastle, & Nation, 2018; National Reading Panel, 2000). Despite the plethora of assessments available, a comprehensive checklist capturing these diverse facets in an integrated manner is notably absent. This research aligns with recent calls for nuanced and holistic assessments (Foorman et al., 2018). Drawing on insights from contemporary studies, we embarked on creating a checklist that addresses the complexities of English reading proficiency targeting the five reading components namely, phonemic awareness, phonics, reading fluency, vocabulary development and reading comprehension. Our aim is to offer educators a practical, up-to-date tool for evaluating learners' abilities across essential components.

Guided by principles of evidence-based practice (Shanahan & Shanahan, 2018), the development process involved collaboration with educators, language specialists, and iterative feedback loops. This approach ensures the checklist's relevance to current educational practices and its alignment with the latest pedagogical standards.

In the context of recent studies (Cain & Oakhill, 2018; Kendeou et al., 2020), the "English Reading Proficiency Checklist" is positioned not only as an assessment tool but also as a potential catalyst for informed instructional strategies and tailored interventions. It has the capacity to provide educators with insights into learners' strengths and challenges, guiding interventions that are aligned with the most recent advancements in literacy research.

In summary, this research contributes to the evolving landscape of literacy assessment. By detailing the development process and grounding it in recent literature, we aim to provide educators with a contemporary and reliable tool—the "English Reading Proficiency Checklist"—to assess and support learners in their reading development.

Stage 1: Instrument Development

The content and item structure of ERPC was informed through focus group discussion includes the researchers, 1 English major and a licensed professional teacher were focused on constructing items that is most appropriate for Grade 3 pupils. Additionally, the researchers did literature review to finalized the items to be included in the instrument and to be validated by the experts. The researchers followed the content validity process of Adegoye et.al., (2023) (see Figure 1).

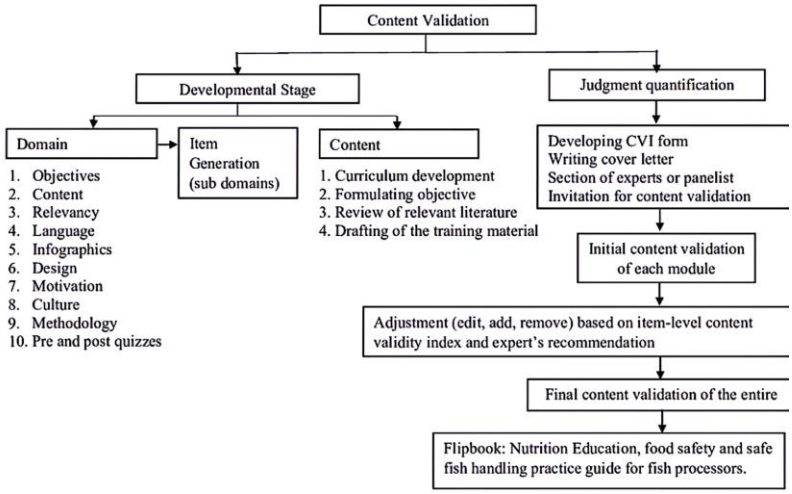

Fig 1. The flowchart of the content validity process

The item questionnaires are developed to assess Grade 3 pupils in their English reading proficiency with the following components (1) phonemic awareness; (2) phonics skills; (3) reading fluency; (4) vocabulary development; and (5) reading comprehension identified by (National Reading Panel, 2000) (see Figure 2).

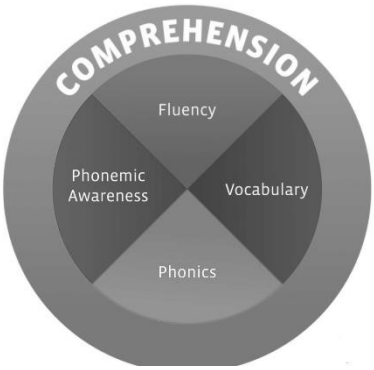

Fig 2. Five Reading Components

Stage 2: Judgment

It was recommended to have at least 5 experts to validate the instrument. Hence, the researchers ensure 5 experts to ensure content validity. The researchers went to 5 experts in English language and has professional experience in teaching English for years. According to (Polit & Beck, 2006) the number of three to five experts has a cut-off score in CVI should be 1.00. Hence, the researchers used this as a reference in the computation of Content validity Index (CVI) of items in ERPC.

Table 1. Details of the Experts Selected for Content Validity

No. of Experts	Designation	Years of Experience
Expert 1	High School English Teacher	4
Expert 2	High School English Teacher	10
Expert 3	College Oral Communication Professor	25
Expert 4	Elementary English Teacher	7
Expert 5	Elementary English teacher	5

The experts were asked how relevant each item being measured. Additionally, the experts were asked to put on their comments and suggestions on the items that is not relevant and not necessary to be included in the instrument. Their responses on the rating scale were being collected by computing CVI, Kappa statistic and CVR.

Quantification of Content Validity

CVI

The content validity index (CVI) is used to analyze the test items on a scale of 1-4 where 1 means not relevant, 2 means somewhat relevant, 3 means quite relevant and 4 means highly relevant. The experts were asked to rate each items based on its relevance and the researchers asked them to put on comments on items that were rated as 1 and 2. By computing the total number of experts who rated 3 to 4 is the CVI of each item. The I-CVI for each item and S-CVI for universal agreement were computed.

The I-CVI for item was measured by dividing the rate of the experts who rated 3 to 4 by the sum of the experts participated in the validation of the English Reading Proficiency Checklist. Moreover, S-CVI or the universal agreement of the overall scale was measured by the total of the I-CVI divided by the total number of the items with the same agreement. While the average S-CVI was calculated by averaging the total CVI of each items (I-CVI) divided by the total number of items in the scale. Hence, there are two ways of S-CVI. One of the two is the universal agreement and the other one is the average. The standard percentage for S-CVI universal agreement is 0.80 while 0.90 for S-CVI average (Lynn, 1986; Polit & Beck, 2006; Rubio, Berg Weger, Tebb, Lee, &Rauch, 2003).

Kappa Statistic Coefficient

The researchers employed CVI to determine the content validity. Nevertheless, the inflated values does not take into account as a result of chance agreement. Hence, by calculating Kappa coefficient ensures understanding of content validity by taking away random chance agreement. Additionally, Kappa statistic supports CVI to ensure the agreement among experts is not a coincidence.

The computation of Kappa Statistic include the probability of chance agreement (Pc). The formula for this is, $Pc = [N! / A! (N – A)!] \times 0.5N$. According to the formula, N represents number of experts, A represents the number of experts who agree that the item is relevant. Furthermore, Kappa statistic formula is, $K = (I\text{-}CVI – Pc) / (1 – Pc)$ wherein above 0.74 means excellent, between 0.60 and 0.74 means good, and between 0.40 and 0.59 means fair (Polit & Beck, 2006; Zamanzadeh et al., 2014).

CVR

According to Lawshe test, CVR is necessary to determine whether an item is essential for operating construct in a group of items or not. The researchers asked the experts to rate each item on a scale of 1 to 3, wherein 1 means *not essential*, 2 means *essential but not necessary* and 3 means *essential.*

The formula for CVR is $CVR = (Ne – N / 2) / (N / 2)$ in which Ne represents the number of experts who rated *essential* and N means the sum of the experts. The total number of experts who validated ERPC are 5. Therefore, if CVR is bigger than 0.99, it will remain as an item on the scale (Lawshe, 1975).

Results

The content validity of the items are done with the earnest cooperation of the 5 experts. The I-CVI for all the items of the five English Reading components are ranged from 0.6 to 1. The S-CVI Average for phonemic awareness, phonics skills, reading fluency, vocabulary development was 0.91 (Table 2), 0.87 (Table 3), 0.76 (Table 4), 0.90 (Table 5), 0.83 (Table 6). The overall S-CVI for the 150-item scale was 0.45 implied to have not reached the content validity standard for S-CVI (universal agreement) of 0.80. Moreover, items which had below 1.00 I-CVI are for revision. Additionally, Kappa statistic ranged from -0.06 to 1. Twenty six items with negative kappa coefficient reflected a disagreement among experts regarding their inclusion in the construct of English Reading Proficiency Checklist (ERPC). CVR for the items observed the percentage of experts rating an item as "*essential."* 77 items from 150 item scale were rated as not necessary by the experts (Table 7). However, 73 of the items reached the minimum value of 0.99 which means that these items are essential for the construct of English Reading Proficiency Checklist.

Table 2. Ratings on 30-item scale for "Phonemic Awareness" a Component of English Reading by Five Experts: Items Rated 3 or 4 on a 4-Point Relevant Scale.

Items	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	No.of Agreement	I-CVI	Pc	Kappa Statistic
1	×	×	×	×	×	5	1	0.031	1
2	×	×	×	×	×	5	1	0.031	1
3	×	×	×	×	×	5	1	0.031	1
4	×	×	×	×	×	5	1	0.031	1
5	×	×	-	×	×	4	0.8	0.156	0.7630
6	×	×	-	×	×	4	0.8	0.156	0.7630
7	×	×	×	×	×	5	1	0.031	1
8	×	×	×	×	×	5	1	0.031	1
9	×	×	×	×	×	5	1	0.031	1
10	×	×	×	×	×	5	1	0.031	1
11	×	×	×	×	×	5	1	0.031	1
12	×	×	-	×	×	4	0.8	0.156	0.7630
13	×	×	-	×	×	4	0.8	0.156	0.7630
14	×	×	-	×	×	4	0.8	0.156	0.7630
15	×	×	×	×	×	5	1	0.031	1
16	×	×	×	×	×	5	1	0.031	1
17	×	×	×	×	×	5	1	0.031	1
18	×	×	×	×	×	5	1	0.031	1
19	×	×	×	×	×	5	1	0.031	1
20	×	×	×	×	×	5	1	0.031	1
21	×	×	×	×	×	5	1	0.031	1
22	×	×	×	×	×	5	1	0.031	1
23	×	×	×	×	×	5	1	0.031	1
24	×	×	-	-	×	3	0.6	0.625	Negative
25	×	×	-	-	×	3	0.6	0.625	Negative
26	×	×	-	×	×	4	0.8	0.156	0.7630
27	×	×	×	×	×	5	1	0.031	1
28	×	×	-	-	×	3	0.6	0.625	Negative
29	×	×	-	×	×	4	0.8	0.156	0.7630
30	×	×	×	×	×	5	1	0.031	1

Note. S-CVI (Average) = 0.91 (accepted). I-CVI = item content validity; Pc = probability of chance agreement; S-CVI= scale content validity index.

Table 3. Ratings on 30-item scale for "Phonics Skills" a Component of English Reading by Five Experts: Items Rated 3 or 4 on a 4-Point Relevant Scale.

Items	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	No.of Agreement	I-CVI	Pc	Kappa Statistic
1	×	×	×	×	×	5	1	0.031	1
2	×	×	×	×	×	5	1	0.031	1
3	×	×	×	×	-	4	0.8	0.156	0.7630
4	×	×	×	×	×	5	1	0.031	1
5	×	×	×	×	-	4	0.8	0.156	0.7630
6	×	×	-	×	-	3	0.6	0.625	Negative
7	×	×	×	×	×	5	1	0.031	1
8	×	×	×	-	×	4	0.8	0.156	0.7630
9	×	×	×	×	×	5	1	0.031	1
10	×	×	×	×	×	5	1	0.031	1
11	×	×	×	×	×	5	1	0.031	1
12	×	×	×	-	×	4	0.8	0.156	0.7630
13	×	×	×	-	×	4	0.8	0.156	0.7630
14	×	×	×	-	×	4	0.8	0.156	0.7630
15	×	×	×	-	×	4	0.8	0.156	0.7630
16	×	×	×	×	×	5	1	0.031	1
17	×	×	×	×	×	5	1	0.031	1
18	×	×	×	×	×	5	1	0.031	1
19	×	×	×	×	×	5	1	0.031	1
20	×	×	×	×	×	5	1	0.031	1
21	×	×	×	×	×	5	1	0.031	1
22	×	×	×	×	×	5	1	0.031	1
23	-	×	×	×	×	4	0.8	0.156	0.7630
24	-	×	×	×	×	4	0.8	0.156	0.7630
25	-	×	×	×	×	4	0.8	0.156	0.7630
26	-	×	×	×	×	4	0.8	0.156	0.7630
27	-	×	×	-	×	3	0.8	0.156	0.7630
28	-	×	×	-	×	3	0.6	0.625	Negative
29	-	×	×	-	×	3	0.6	0.625	Negative
30	-	×	×	×	×	4	0.8	0.156	0.7630

Note. S-CVI (Average) = 0.87 (not accepted). I-CVI = item content validity index; Pc = probability of chance agreement; S-CVI = scale content validity index.

Table 4. Ratings on 30-item scale for "Reading Fluency" a Component of English Reading by Five Experts: Items Rated 3 or 4 on a 4-Point Relevant Scale.

Items	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	No.of Agreement	I-CVI	Pc	Kappa Statistic
1	-	×	×	×	×	4	0.8	0.156	0.7630

2	-	×	×	×	×	4	0.8	0.156	0.7630
3	-	×	×	×	×	4	0.8	0.156	0.7630
4	-	×	×	×	×	4	0.8	0.156	0.7630
5	-	×	×	×	×	4	0.8	0.156	0.7630
6	-	×	×	×	×	4	0.8	0.156	0.7630
7	-	×	×	×	×	4	0.8	0.156	0.7630
8	-	×	×	×	×	4	0.8	0.156	0.7630
9	-	×	×	×	×	4	0.8	0.156	0.7630
10	×	×	×	×	×	5	1	1	1
11	×	×	×	×	×	5	1	1	1
12	-	×	×	×	×	4	0.8	0.156	0.7630
13	-	×	×	×	×	4	0.8	0.156	0.7630
14	-	×	×	×	×	4	0.8	0.156	0.7630
15	-	×	×	×	×	4	0.8	0.156	0.7630
16	×	×	×	×	×	5	1	1	1
17	×	×	×	×	×	5	1	1	1
18	-	×	×	×	×	4	0.8	0.156	0.7630
19	-	×	×	-	×	3	0.6	0.625	Negative
20	-	×	×	-	×	3	0.6	0.625	Negative
21	-	×	×	-	×	3	0.6	0.625	Negative
22	-	×	×	-	×	3	0.6	0.625	Negative
23	-	×	×	×	×	4	0.8	0.156	0.7630
24	-	×	×	-	×	3	0.6	0.625	Negative
25	-	×	×	-	×	3	0.6	0.625	Negative
26	-	×	×	-	×	3	0.6	0.625	Negative
27	-	×	×	-	×	3	0.6	0.625	Negative
28	-	×	×	-	×	3	0.6	0.625	Negative
29	-	×	×	×	×	4	0.8	0.156	0.7630
30	-	×	×	×	×	4	0.8	0.156	0.7630

Note. S-CVI (Average) = 0.76 (not accepted). I-CVI = item content validity index; Pc = probability of chance agreement; S-CVI = scale content validity index.

Table 5. Ratings on 30-item scale for "Vocabulary Development" a Component of English Reading by Five Experts: Items Rated 3 or 4 on a 4-Point Relevant Scale.

Items	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	No.of Agreement	I-CVI	Pc	Kappa Statistic
1	×	×	×	×	×	5	1	0.031	1
2	×	×	×	×	×	5	1	0.031	1
3	×	×	×	×	×	5	1	0.031	1
4	×	×	×	×	×	5	1	0.031	1
5	×	×	×	×	×	5	1	0.031	1
6	×	×	×	×	×	5	1	0.031	1
7	-	×	×	×	×	4	0.8	0.156	0.7630
8	×	×	×	×	×	5	1	0.031	1
9	×	×	×	×	×	5	1	0.031	1
10	×	×	×	×	×	5	1	0.031	1
11	×	×	×	-	×	4	0.8	0.156	0.7630
12	×	×	-	-	×	3	0.6	0.625	Negative
13	×	×	-	×	×	4	0.8	0.156	0.7630
14	×	×	-	×	×	4	0.8	0.156	0.7630
15	×	×	×	×	×	5	1	0.031	1
16	-	×	×	×	×	4	0.8	0.156	0.7630
17	×	×	×	×	×	5	1	0.031	1

18	-	×	×	×	×	4	0.8	0.156	0.7630
19	×	×	×	×	×	5	1	0.031	1
20	×	×	×	×	×	5	1	0.031	1
21	-	×	×	×	×	4	0.8	0.156	0.7630
22	×	×	×	×	×	5	1	0.031	1
23	×	×	×	×	×	5	1	0.031	0.7630
24	×	×	×	×	×	5	1	0.031	0.7630
25	×	×	×	-	-	3	0.6	0.625	Negative
26	-	×	×	×	-	3	0.6	0.625	Negative
27	-	×	×	×	-	3	0.6	0.625	Negative
28	×	×	×	×	×	5	1	0.031	1
29	×	×	×	×	×	5	1	0.031	1
30	×	×	×	×	×	5	1	0.031	1
Note. S-CVI (Average) = 0.90 (accepted). I-CVI = item content validity index; Pc = probability of chance agreement ; S-CVI = scale content validity index.									

Table 6. Ratings on 30-item scale for "Reading Comprehension" a Component of English Reading by Five Experts: Items Rated 3 or 4 on a 4-Point Relevant Scale.

Items	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	No.of Agreement	I-CVI	Pc	Kappa Statistic
1	×	×	×	×	×	5	1	0.031	1
2	-	×	×	×	×	4	0.8	0.156	0.7630
3	×	×	×	×	×	5	1	0.031	1
4	×	×	×	×	×	5	1	0.031	1
5	×	×	×	×	×	5	1	0.031	1
6	×	×	×	×	×	5	1	0.031	1
7	-	×	×	×	×	4	0.8	0.156	0.7630
8	×	×	×	×	×	5	1	0.031	1
9	×	×	×	×	×	5	1	0.031	1
10	×	×	×	×	×	5	1	0.031	1
11	×	×	×	×	×	5	1	0.031	1
12	×	×	×	×	×	5	1	0.031	1
13	-	×	×	×	×	4	0.8	0.031	0.7630
14	-	×	-	×	×	3	0.6	0.625	Negative
15	-	×	×	-	×	3	0.6	0.625	Negative
16	-	×	×	×	×	4	0.8	0.156	0.7630
17	-	×	×	×	×	4	0.8	0.156	0.7630
18	-	×	×	×	×	4	0.8	0.156	0.7630
19	×	×	×	×	×	5	1	0.031	1
20	×	×	×	×	×	5	1	0.031	1
21	-	×	×	×	-	3	0.6	0.625	Negative
22	-	×	×	×	×	4	0.8	0.156	0.7630
23	-	×	×	×	×	4	0.8	0.156	0.7630
24	-	×	×	×	×	4	0.8	0.156	0.7630
25	-	×	×	×	×	4	0.8	0.156	0.7630
26	-	×	×	×	×	4	0.8	0.156	0.7630
27	-	×	×	-	×	3	0.6	0.625	Negative
28	-	×	×	-	×	3	0.6	0.625	Negative
29	-	×	×	-	×	3	0.6	0.625	Negative

30	-	×	×	-	×	3	0.6	0.625	Negative

Note. S-CVI (Average) = 0.83 (not accepted). I-CVI = item content validity index; Pc = probability of chance agreement; S-CVI = scale content validity index.

Table 7. CVR for Items Each Components Where Ne Represents the Number of Experts Who Rate an Item as "Essential."

Phonemic Awareness			Phonics Skills			Reading Fluency			Vocabulary Development			Reading Comprehension		
Item no.	Ne	CVR	Item no.	Ne	CVR	Item no.	Ne	CVR	Item no.	Ne	CVR	Item no.	Ne	CVR
1	5	1	1	5	1	1	5	1	1	5	1	1	5	1
2	5	1	2	5	1	2	4	0.6	2	5	1	2	4	0.6
3	5	1	3	4	0.6	3	4	0.6	3	5	1	3	5	1
4	5	1	4	5	1	4	4	0.6	4	5	1	4	5	1
5	4	0.6	5	4	0.6	5	4	0.6	5	5	1	5	5	1
6	4	0.6	6	3	0.2	6	4	0.6	6	5	1	6	5	1
7	5	1	7	5	1	7	4	0.6	7	4	0.6	7	4	0.6
8	5	1	8	4	0.6	8	4	0.6	8	5	1	8	5	1
9	5	1	9	5	1	9	4	0.6	9	5	1	9	5	1
10	5	1	10	5	1	10	5	1	10	5	1	10	5	1
11	5	1	11	5	1	11	5	1	11	4	0.6	11	5	1
12	4	0.6	12	4	0.6	12	4	0.6	12	3	0.2	12	5	1
13	4	0.6	13	4	0.6	13	4	0.6	13	4	0.6	13	4	0.6
14	4	0.6	14	4	0.6	14	4	0.6	14	4	0.6	14	3	0.2
15	5	1	15	4	0.6	15	4	0.6	15	5	1	15	3	0.2
16	5	1	16	5	1	16	4	0.6	16	4	0.6	16	4	0.6
17	5	1	17	5	1	17	4	0.6	17	5	1	17	4	0.6
18	5	1	18	5	1	18	4	0.6	18	4	0.6	18	4	0.6
19	5	1	19	5	1	19	3	0.2	19	5	1	19	5	1
20	5	1	20	5	1	20	3	0.2	20	5	1	20	5	1
21	5	1	21	5	1	21	4	0.6	21	4	0.6	21	3	0.2
22	5	1	22	5	1	22	3	0.2	22	5	1	22	5	1
23	5	1	23	4	0.6	23	3	0.2	23	5	1	23	5	1
24	3	0.2	24	4	0.6	24	3	0.2	24	5	1	24	5	1
25	3	0.2	25	4	0.6	25	2	0.2	25	3	0.2	25	5	1
26	4	0.6	26	4	0.6	26	3	0.2	26	3	0.2	26	5	1
27	5	1	27	3	0.2	27	3	0.2	27	3	0.2	27	3	0.2
28	3	0.2	28	3	0.2	28	3	0.2	28	5	1	28	3	0.2
29	4	0.6	29	3	0.2	29	4	0.6	29	5	1	29	3	0.2
30	5	1	30	4	0.6	30	4	0.6	30	5	1	30	3	0.2

Note. CVR = content validity ratio.

Conclusion

The content validity of the English Reading Proficiency Checklist (ERPC) was done through two-stage process, (1) instrument development; (2) judgment stage. Initially, the instrument development was conducted first by arranging the content. The items were constructed through focus-group discussions led by the researchers. Moreover, the assessment instrument was constructed by following the 5 English reading components analyzed by the National Reading Panel wherein the researchers made 30 items each components. The judgment stage involved 5

selected experts who were asked to rate each items based on its relevance and necessity. The computation of content validity helped in ensuring only the relevant and necessary items are included in the assessment instrument. The researchers conclude that most of the items are needed for revision and improvement. Based on the collected qualitative data from comments and suggestions from the experts, some of the items are not appropriate for Grade 3 pupils and the proper use of grammar should be carefully selected. Furthermore, the English Reading Proficiency Checklist needs to test its reliability and any form of validity to ensure the use of it as an assessment tool for Grade 3 pupils.

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