

Original Article

## **Cognitive Flexibility and Metalinguistic Awareness of Student Journalists**

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### **Abstract**

This study examined the predictive contribution of cognitive flexibility to metalinguistic awareness among elementary student journalists. It addressed a gap in school-based journalism research by linking students' adaptive cognitive processes with their conscious ability to analyze language form, meaning, tone, and communicative purpose. A quantitative descriptive-correlational design was used with 126 Grade 4 to Grade 6 student journalists from public elementary schools in Manay South District, Division of Davao Oriental, Philippines. Data were collected through adapted five-point survey instruments that measured cognitive flexibility across conceptual transfer, feedback utilization, and attention control, and metalinguistic awareness across syntactic, cultural, morphological, phonological, semantic, and communicative awareness. The instruments were reviewed by experts and pilot tested, with Cronbach's alpha coefficients of 0.882 for cognitive flexibility and 0.967 for metalinguistic awareness. Descriptive statistics, Pearson correlation, and multiple linear regression were used for analysis. Results showed that cognitive flexibility was very high overall ( $M = 4.25$ ,  $SD = 0.63$ ), with attention control as the highest domain ( $M = 4.30$ ,  $SD = 0.62$ ). Metalinguistic awareness was high overall ( $M = 4.08$ ,  $SD = 0.67$ ), with communicative awareness as the highest domain ( $M = 4.15$ ,  $SD = 0.70$ ). Cognitive flexibility had a high positive correlation with metalinguistic awareness ( $r = 0.720$ ,  $R^2 = 0.52$ ,  $p = 0.000$ ). The regression model was significant ( $R = 0.790$ ,  $R^2 = 0.624$ , adjusted  $R^2 = 0.615$ ,  $F(3, 122) = 85.300$ ,  $p = 0.000$ ).

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All cognitive flexibility domains were significant predictors, with attention control showing the largest standardized coefficient ( $B = 0.260$ ,  $\beta = 0.230$ ), followed by feedback utilization and conceptual transfer. The findings support the integration of attention-focused revision, feedback cycles, and transfer-based language tasks in elementary campus journalism instruction.

*Keywords:* attention control, cognitive flexibility, metalinguistic awareness, student journalism

## **1. Introduction**

Student journalism requires more than the ability to produce school news. It asks young writers to notice how language choices shape meaning, credibility, fairness, and audience response. In news, feature, editorial, and broadcast tasks, a student journalist must attend to grammar, word precision, tone, source representation, and the possible bias carried by a phrase or sentence. This demand gives metalinguistic awareness a central role in journalism education because it allows learners to treat language as an object for conscious analysis rather than only as a tool for expression. Roehr-Brackin (2024) describes metalinguistic awareness as explicit attention to language forms and functions, while Şeref and Varışoğlu (2020) frame it as a reflective capacity that enables learners to analyze, monitor, and evaluate language use. In school journalism, this capacity can affect whether a learner simply writes a text or deliberately revises it for clarity, accuracy, and ethical communication.

Metalinguistic awareness is multidimensional. Varışoğlu (2018) located the construct across syntactic, cultural, morphological, phonological, semantic, and communicative dimensions, which together describe how learners understand sentence structure, word formation, sound patterns, meaning, culture, and interactional purpose. These dimensions align well with journalism tasks. Syntactic awareness helps the learner produce readable sentences and detect ambiguity. Morphological and semantic awareness support precise vocabulary use, especially when a reporter must select words that are accurate but not sensationalized. Phonological awareness contributes to oral journalism and broadcast delivery. Cultural and communicative awareness support audience-sensitive reporting, especially when stories involve local communities, identity, values, or social issues. MacKay et al. (2021) showed that awareness of sentence-level information matters for reading comprehension, while Levesque et al. (2021) emphasized the role of morphology in literacy development. Such evidence supports the view that language awareness is not a peripheral skill but a foundation for competent literacy practice.

Cognitive flexibility is a related cognitive resource that may help student journalists move between linguistic forms, audience needs, story angles, and editorial

feedback. Yoshida (2025) conceptualized cognitive flexibility through conceptual transfer, feedback utilization, and attentional control, which correspond to learners' ability to apply ideas across contexts, use external input for revision, and shift or sustain focus when task demands change. Lee et al. (2024) described cognitive flexibility as important for adaptation in real-world settings, and Nakhostin-Khayyat et al. (2024) linked it with self-regulation and resilience among students. In the context of a school newsroom, cognitive flexibility may allow a learner to revise a lead after teacher feedback, reframe an editorial to reduce bias, or adjust language when a text changes from a written article to an oral delivery. Orakçı (2021) also connected cognitive flexibility with learner autonomy and reflective thinking, both of which are relevant to campus journalism where students must edit, evaluate, and improve their own work.

The theoretical connection between cognitive flexibility and metalinguistic awareness is strong. Both constructs require learners to step back from an immediate response and consider alternatives. A student who can shift attention among grammar, meaning, facts, and audience may be better positioned to detect unclear sentences, biased words, and weak organization. A learner who can use feedback may also transform teacher or peer comments into more precise language choices. In the same way, conceptual transfer may support the movement of learned language rules from one genre to another, such as from news to feature writing or from classroom grammar tasks to school publication editing. Feedback research further supports this connection because effective feedback can shape self-regulated revision when it gives learners usable information about task quality and next steps (Wisniewski et al., 2020). For elementary student journalists, these cognitive and linguistic abilities may develop together through repeated cycles of drafting, editing, and reflection.

Despite this conceptual fit, empirical evidence remains limited in elementary campus journalism. Much of the literature on metalinguistic awareness focuses on language learning, literacy, or teacher education, while cognitive flexibility is often examined as a general executive or adaptive skill. Fewer studies address whether cognitive flexibility domains can explain variation in metalinguistic awareness among young students who already use language for public-facing school communication. This gap matters because student journalists encounter authentic language demands at an early age. They do not only answer classroom exercises; they produce texts that represent events, people, and institutional messages. Understanding the cognitive predictors of their language awareness can guide more precise instruction for advisers, language teachers, and school publication programs.

The present study focused on elementary student journalists in public elementary schools in Manay South District, Division of Davao Oriental, during School Year 2025-2026. It examined the level of cognitive flexibility in terms of conceptual transfer, feedback utilization, and attention control, and the level of metalinguistic awareness in terms of syntactic, cultural, morphological, phonological, semantic, and communicative awareness. It also determined the relationship between cognitive flexibility and metalinguistic awareness and identified the cognitive flexibility

domains that significantly predicted metalinguistic awareness. By situating these variables in elementary campus journalism, the study contributes evidence for language instruction that treats journalism as both a literacy practice and a cognitive training context.

## **2. Methodology**

This study used a quantitative descriptive-correlational design to examine cognitive flexibility and metalinguistic awareness among elementary student journalists. The design was appropriate because the study described the levels of the two variables, tested their statistical relationship, and estimated the predictive contribution of cognitive flexibility domains without manipulating the learning environment. Pregoner (2024) note that correlational approaches are useful when researchers seek to examine associations among variables as they occur in a given setting. The study was conducted in public elementary schools in Manay South District, Division of Davao Oriental, Philippines, during School Year 2025-2026.

The respondents were 126 elementary student journalists selected through purposive sampling. The sample consisted of learners from Masanguid Elementary School (n = 18), Mandaguio Elementary School (n = 17), New Dahican Elementary School (n = 15), Bato-Bato Elementary School (n = 14), Ronquillo and Dayanghirang Elementary School (n = 13), Tengson Elementary School (n = 12), Malabang Elementary School (n = 11), Pagsayawan Elementary School (n = 10), and Limentuog Elementary School (n = 16). The respondents were Grade 4 to Grade 6 pupils who were officially recognized members of school publication teams or active participants in campus journalism activities. They had experience in school-based journalism tasks such as news writing, feature writing, editorial writing, copyreading, headline writing, or participation in school-based or district-level journalism competitions. Learners with irregular journalism participation, those enrolled in alternative learning systems, and those without verifiable involvement in campus journalism were not included.

Data were collected through an adapted survey questionnaire composed of two major scales. The cognitive flexibility scale was adapted from Yoshida (2025) and contained 12 items across conceptual transfer, feedback utilization, and attention control. The metalinguistic awareness scale was adapted from the framework of Varişoğlu (2018) and Şeref and Varişoğlu (2020) and contained 41 items across syntactic, cultural, morphological, phonological, semantic, and communicative awareness. All items used a five-point Likert format from 1 (strongly disagree) to 5 (strongly agree). Mean scores from 4.20 to 5.00 were interpreted as very high, 3.40 to 4.19 as high, 2.60 to 3.39 as moderate, 1.80 to 2.59 as low, and 1.00 to 1.79 as very low. For cognitive flexibility, a very high score meant that the behavior was always observed, while a high score meant that it was often observed. The same interpretive logic was applied to metalinguistic awareness.

The adapted questionnaire underwent expert review before administration. Three specialists in applied linguistics, educational psychology, and language education

examined the items for relevance, clarity, alignment with the study variables, and suitability for elementary student journalists. After revision based on expert comments, the questionnaire was pilot tested with 30 elementary student journalists who were not part of the final sample. Reliability analysis produced a Cronbach's alpha coefficient of 0.882 for the 12-item cognitive flexibility scale and 0.967 for the 41-item metalinguistic awareness scale, which supported the internal consistency of the instruments for the study context.

Administrative and ethical procedures were completed before data collection. Permission was secured from the graduate school and the schools division authorities, followed by coordination with school heads and journalism advisers. Participation was voluntary. The purpose of the study, the nature of the questionnaire, and the right to withdraw were explained in age-appropriate language. Consent and assent procedures were observed, and no learner names were used in the data set. Responses were coded, kept confidential, and used only for research analysis. The researcher administered the questionnaire in coordination with school personnel to ensure orderly distribution, completion, and retrieval of forms.

The data were encoded, screened, and analyzed using descriptive and inferential statistics. Means and standard deviations were used to describe cognitive flexibility and metalinguistic awareness by item, domain, and overall score. Pearson product-moment correlation was used to determine the relationship between cognitive flexibility and metalinguistic awareness. Multiple linear regression was used to determine which domains of cognitive flexibility significantly predicted metalinguistic awareness. Conceptual transfer, feedback utilization, and attention control were entered simultaneously as predictors. Statistical significance was evaluated at the 0.05 level.

### 3. Results

Table 1 presents the domain, and overall statistics for cognitive flexibility. The overall mean was 4.25 (SD = 0.63), described as very high. Across the three domains, attention control had the highest mean (M = 4.30, SD = 0.62), followed by feedback utilization (M = 4.27, SD = 0.62) and conceptual transfer (M = 4.18, SD = 0.66).

**Table 1.** Cognitive flexibility domain statistics.

<b>Domain</b>	<b>SD</b>	<b>Mean</b>	<b>Descriptive Level</b>
Conceptual Transfer	0.66	4.18	High
Feedback Utilization	0.62	4.27	Very High
Attention Control	0.62	4.30	Very High
Overall	0.63	4.25	Very High

Table 2 presents the domain, and overall statistics for metalinguistic awareness. The overall mean was 4.08 (SD = 0.67), described as high. Communicative awareness

had the highest domain mean ( $M = 4.15$ ,  $SD = 0.70$ ), followed by phonological awareness ( $M = 4.10$ ,  $SD = 0.70$ ), semantic awareness ( $M = 4.08$ ,  $SD = 0.69$ ), syntactic awareness ( $M = 4.05$ ,  $SD = 0.64$ ), morphological awareness ( $M = 4.05$ ,  $SD = 0.63$ ), and cultural awareness ( $M = 4.03$ ,  $SD = 0.64$ ).

**Table 2.** Metalinguistic awareness domain statistics.

<b>Domain</b>	<b>SD</b>	<b>Mean</b>	<b>Descriptive Level</b>
Syntactic Awareness	0.64	4.05	High
Cultural Awareness	0.64	4.03	High
Morphological Awareness	0.63	4.05	High
Phonological Awareness	0.70	4.10	High
Semantic Awareness	0.69	4.08	High
Communicative Awareness	0.70	4.15	High
Overall	0.67	4.08	High

Table 3 shows the correlation between cognitive flexibility and metalinguistic awareness. Cognitive flexibility was positively related to metalinguistic awareness,  $r = 0.720$ ,  $p = 0.000$ . The coefficient of determination was 0.52.

**Table 3.** Correlation results.

<b>Variables</b>	<b>r</b>	<b>p-value</b>
Cognitive Flexibility	0.72	0.000
Metalinguistic Awareness		

Table 4 presents the multiple regression results. The overall model produced  $R = 0.790$ ,  $R^2 = 0.624$ , adjusted  $R^2 = 0.615$ , standard error of the estimate = 0.41752,  $F(3, 122) = 85.300$ ,  $p = 0.000$ . The regression equation was Metalinguistic Awareness =  $0.920 + 0.180(\text{Conceptual Transfer}) + 0.240(\text{Feedback Utilization}) + 0.260(\text{Attention Control})$ . Conceptual transfer ( $B = 0.180$ ,  $SE = 0.250$ ,  $\beta = 0.160$ ,  $t = 2.700$ ,  $p = 0.000$ ), feedback utilization ( $B = 0.240$ ,  $SE = 0.270$ ,  $\beta = 0.210$ ,  $t = 2.890$ ,  $p = 0.000$ ), and attention control ( $B = 0.260$ ,  $SE = 0.280$ ,  $\beta = 0.230$ ,  $t = 3.100$ ,  $p = 0.000$ ) were significant predictors.

**Table 4.** Regression results.

<b>Predictor</b>	<b>B</b>	<b>SE</b>	<b>Beta</b>	<b>t</b>	<b>p-value</b>
Constant	0.920	0.280	-	3.290	0.000
Conceptual Transfer	0.180	0.250	0.160	2.700	0.000
Feedback Utilization	0.240	0.270	0.210	2.890	0.000
Attention Control	0.260	0.280	0.230	3.100	0.000

#### **4. Discussion**

The findings show that elementary student journalists reported very high cognitive flexibility and high metalinguistic awareness. This pattern is meaningful because journalism tasks require the learner to move among information search, language choice, source meaning, audience expectation, and revision. Yoshida (2025) identified conceptual transfer, feedback utilization, and attentional control as central dimensions of cognitive flexibility, and the present results suggest that these dimensions are active among student journalists who already take part in school publication tasks. At the same time, the high level of metalinguistic awareness supports the position of Şeref and Varişoğlu (2020) that learners can consciously analyze language structures and functions when learning contexts encourage reflection on form and meaning. In elementary journalism, such reflection is not abstract; it appears when pupils revise a sentence for accuracy, select a neutral term, or adjust tone for a school audience.

Attention control had the highest cognitive flexibility mean and was the strongest predictor of metalinguistic awareness. This finding fits the conceptual basis of metalinguistic awareness because explicit language analysis requires sustained attention to grammar, sound, word structure, meaning, and communicative purpose (Roehr-Brackin, 2024). It also aligns with Lee et al. (2024), who emphasized that cognitive flexibility supports adaptation when individuals must shift attention across changing task demands. For student journalists, attention control may help them hold several demands in mind at once: factual accuracy, sentence clarity, source fairness, headline precision, and audience response. The result implies that students who can manage attention during writing and revision are more able to notice how language works and how it may affect a reader.

Feedback utilization also significantly predicted metalinguistic awareness. This result is consistent with the role of feedback in language learning and self-regulated revision. Wisniewski et al. (2020) showed that feedback has educational value when it provides information that learners can use to close the gap between current performance and desired performance. In campus journalism, feedback from advisers, peers, and editors can direct attention to vague wording, weak transitions, poor word choice, or sentence structures that distort meaning. When learners treat feedback as information for revision rather than as simple correction, they develop greater awareness of language form and function. This explains why feedback utilization can contribute to metalinguistic awareness in a publication setting.

Conceptual transfer was also a significant predictor, although it had the lowest standardized coefficient among the three cognitive flexibility domains. This result indicates that the ability to apply ideas across contexts still matters for metalinguistic awareness. A student journalist must transfer language concepts from grammar lessons to news writing, from reading comprehension to editorial evaluation, and from oral communication to broadcast delivery. Such transfer is consistent with Orakcı's (2021) view that cognitive flexibility is linked with reflective thinking and learner autonomy.

It is also consistent with literacy research that shows specific language awareness skills, such as sentence awareness and morphology, support broader comprehension and expression (Levesque et al., 2021; MacKay et al., 2021). The lower relative coefficient may mean that conceptual transfer becomes stronger when students receive more explicit support on how to connect classroom language concepts with journalism genres.

The metalinguistic awareness results show that communicative awareness was the highest domain, while cultural awareness had the lowest mean. The higher communicative score may reflect the nature of campus journalism, where students routinely consider audience, message, and response. Varişoğlu (2018) treated communicative awareness as part of broader metalinguistic awareness because it reflects the learner's ability to judge language according to context and purpose. In contrast, the lower cultural awareness mean may indicate that students need more structured opportunities to examine how language carries values, identity, power, and local cultural meaning. Pregoner et al. (2024) argued that children vary in how they notice language as an object of analysis, and the present results suggest that cultural dimensions of language may require more deliberate instruction than everyday communicative choices.

The positive correlation between cognitive flexibility and metalinguistic awareness was high, and the regression model accounted for 62.4% of the variance in metalinguistic awareness. This magnitude supports the view that flexible cognition and reflective language awareness are closely linked in student journalism. Nevertheless, the design remains descriptive-correlational, so the results should not be read as proof of causation. Creswell and Creswell (2023) emphasize that correlational designs can identify relationships and predictive patterns but cannot establish causal direction without experimental control. It is possible that cognitive flexibility supports metalinguistic awareness, that language awareness strengthens flexible thinking, or that both develop through repeated journalism practice. The findings therefore support a practical educational claim: instruction that combines cognitive flexibility tasks with language analysis may be useful for student journalists.

The results have implications for campus journalism instruction. Advisers and language teachers can strengthen attention control through focused editing routines that require pupils to revise one feature at a time, such as accuracy, sentence structure, word meaning, tone, or audience fit. They can strengthen feedback utilization through peer-editing protocols that ask students to explain how a comment changed a sentence or headline. They can strengthen conceptual transfer through tasks that ask pupils to apply one language concept across news, feature, editorial, and broadcast scripts. These strategies connect with Yoshida's (2025) dimensions of cognitive flexibility and with the metalinguistic framework of Şeref and Varişoğlu (2020). They also reflect the feedback principles identified by Wisniewski et al. (2020), where feedback becomes more powerful when it supports task, process, and self-regulation rather than general praise.

The findings also point to the need for language-aware journalism curricula at the elementary level. Journalism activities can serve as authentic spaces for syntactic, morphological, semantic, phonological, cultural, and communicative analysis. Rather than treating campus journalism only as a competition activity, schools can use it as a structured literacy environment where students learn to question how language shapes truthfulness, fairness, and public meaning. The high scores in this study show that student journalists already possess useful foundations, but the lower relative scores in cultural awareness and conceptual transfer suggest areas for refinement. Future instruction can include culturally responsive reporting tasks, bias detection exercises, source representation analysis, and revision conferences that ask students to justify language decisions. These practices can help young journalists become not only better writers but also more responsible users of language.

Several limitations should be considered. The data were self-reported, which means that the scores may reflect students' perceptions rather than direct performance in journalistic writing. The respondents came from one district and were selected through purposive sampling, so the results may not represent all elementary student journalists. The study was also cross-sectional, so it could not track development over time. Future research may use writing portfolios, performance rubrics, think-aloud protocols, adviser ratings, or experimental interventions to test whether attention-focused revision, feedback training, or transfer-based journalism instruction can improve metalinguistic awareness. Longitudinal designs may also show how cognitive flexibility and language awareness develop across grade levels and publication experience.

## **5. Conclusion**

The study concludes that cognitive flexibility is a meaningful statistical correlate and predictor of metalinguistic awareness among elementary student journalists. The respondents showed very high cognitive flexibility and high metalinguistic awareness, with attention control as the strongest cognitive flexibility domain and communicative awareness as the highest metalinguistic awareness domain. Cognitive flexibility had a high positive relationship with metalinguistic awareness, and the regression model showed that conceptual transfer, feedback utilization, and attention control all significantly predicted metalinguistic awareness.

These findings indicate that student journalists' capacity to focus attention, use feedback, and transfer concepts across contexts is closely linked with their ability to analyze language form, meaning, and communicative purpose. Attention control appears especially important because journalistic writing requires simultaneous attention to accuracy, clarity, tone, and audience. The study therefore supports instructional approaches that combine language analysis with attention-focused revision, guided feedback, and genre transfer. Elementary campus journalism can function as a strong literacy space when learners are taught not only to write stories

but also to reflect on how language shapes message, credibility, and ethical communication.

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## **Conflict of Interest Statement**

The authors declare no conflict of interest.

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