

# **The Effectiveness of an 8-Week Learning Recovery Curriculum Program on Improving Literacy and Numeracy among Grade 3 Students in Public Elementary Schools in the Bicol Region: An Educational Economics Perspective**

**Juliana**

Massey University, Palmerston North, New Zealand

[Juliana\\_688@gmail.com](mailto:Juliana_688@gmail.com)

## **Abstract**

Literacy and numeracy skills are foundational, supporting long-term learning outcomes and significantly impacting future individual economic productivity. This study aims to evaluate the effectiveness of the 8-Week Learning Recovery Curriculum Program in enhancing the literacy and numeracy skills of Grade 3 students in selected public elementary schools in the Bicol region. Employing a descriptive-correlational research design combined with a Systematic Literature Review (SLR) approach, data were collected from 331 students and 11 teachers across five elementary schools in four districts of the Bicol region. The results indicate a significant increase in the proportion of students classified as 'Grade Ready,' rising from 21% in the pre-test to 34% in the post-test. This study underscores the importance of data-driven, short-term educational interventions in supporting human resource development and promoting efficiency in educational budget allocation.

## **Keywords:**

Literacy,  
Numeracy,  
Recovery  
Curriculum,  
Program  
Effectiveness,  
Educational  
Economics

## **INTRODUCTION**

Literacy and numeracy capabilities make a crucial contribution to long-term economic growth as they are directly linked to labor productivity (Hanushek & Woessmann, 2008; Psacharopoulos & Patrinos, 2018; OECD, 2012; Heckman, 2006; Murnane & Levy, 1996). Within the field of educational economics, foundational literacy constitutes human capital that determines an individual's active participation in the labor market (Becker, 1993). When educational investment targets these fundamental skills, its potential impact on national economic growth becomes more significant (Schultz, 1971; Romer, 1990).

The COVID-19 pandemic exacerbated disparities in learning achievement, particularly in developing countries like the Philippines (UNESCO, 2020; Dorn et al., 2020; Azevedo et al., 2021; World Bank, 2021; Save the Children, 2020). The decline in foundational skills during the pandemic led to *learning loss*, impacting the efficiency of educational economics (Vegas & Winthrop, 2020). These disparities also trigger inefficiencies in the allocation of public education budgets (Barr & Diamond, 2021; Glaeser, 2020).

Interventions such as the 8-week recovery curriculum can be viewed as short-term investment strategies to recover *learning loss* and minimize long-term economic detriments (Banerjee et al., 2007; Evans & Yuan, 2022; OECD, 2021; Levin, 2001; Hattie, 2009). This strategy aims for efficient utilization of educational resources and an increased *return to education* (Heckman & Masterov, 2007; Levin & McEwan, 2001).

Literacy and numeracy skills acquired in primary education serve as early indicators of human capital formation (Hanushek et al., 2015; Heckman et al., 2013; Gertler et al., 2014; Becker, 1993; Acemoglu & Autor, 2011). In this context, curriculum interventions become tools for improving educational outcomes, which ultimately impact national productivity and economic welfare (Krueger & Lindahl, 2001; Barro, 2001).

This study aims to analyze the effectiveness of the learning recovery curriculum program within the context of enhancing student literacy and numeracy and its implications for primary education efficiency. By adopting an educational economics perspective, this

research contributes to the development of evidence-based policies regarding the allocation of educational resources (McEwan, 2015; Hanushek, 2020; Glewwe & Kremer, 2006; Vegas & Petrow, 2008; UNESCO, 2015).

## RESEARCH METHOD

This research employs a Systematic Literature Review (SLR) approach to analyze the effectiveness of recovery curriculum programs in enhancing literacy and numeracy learning outcomes. The SLR approach adhered to the PRISMA protocol, involving stages of identification, screening, eligibility assessment, and inclusion of articles (Moher et al., 2009). The analysis included 45 scholarly publications published between 2010 and 2023, sourced from the Scopus, ERIC, and Google Scholar databases. Inclusion criteria comprised studies focusing on literacy and numeracy among elementary school students, the implementation of educational intervention programs, and evaluations based on learning outcomes.

Literature analysis was conducted using *thematic synthesis* to group key findings according to themes: the effectiveness of short-term interventions, teacher strategies in recovery learning, and post-pandemic educational policies. The results of the literature synthesis served as the theoretical and empirical foundation for comparing the findings from the field study conducted in the five public elementary schools in the Bicol region. This approach facilitated the integration of field data with educational economics theory in assessing the recovery curriculum policy.

## RESULTS AND DISCUSSION

The implementation of the 8-week Learning Recovery Curriculum showed a significant increase in literacy levels among Grade 3 learners. As shown in Figure 1, the number of students classified as "Grade Ready" increased from 21% to 34% after the intervention. This result supports the assertion by Snow (2002), that early reading interventions can significantly improve foundational literacy. It also confirms Slavin et al. (2009), who emphasized the importance of structured literacy programs in improving student outcomes. The increase aligns with the findings of Reutzel & Cooter (2012), that targeted interventions are essential to close reading achievement gaps. Furthermore, the curriculum's design aligns with the learner-centered framework proposed by Bransford et al. (2000), suggesting that responsive instructional design leads to better outcomes. Lastly, McGee and Richgels (2004) assert that continuous assessment during instruction supports literacy gains—an element embedded in the 8-week program.



Numeracy scores also improved, with a noticeable shift in learners progressing to higher proficiency levels. Figure 2 (to be included) presents this upward movement across numeracy categories. These improvements corroborate the theory by Clements & Sarama (2009), which underscores the efficacy of structured numeracy interventions. Additionally,

the shift confirms the findings by Jordan et al. (2006), who noted that early mathematical interventions enhance problem-solving skills. Gersten et al. (2009) also found that explicit teaching of foundational number concepts improves math outcomes. The observed results further align with Ginsburg et al. (2008), who stressed that math instruction should be developmentally appropriate and data-driven. The increase in numeracy echoes Siegler's (2009) findings that short-term, targeted math programs can yield significant benefits.

Table 1 shows a detailed distribution of learners across the four proficiency categories—Full Refresher, Moderate Refresher, Light Refresher, and Grade Ready—before and after the intervention. The decline in students requiring a Full Refresher (from 42% to 25%) is especially notable. This reflects the curriculum's efficacy in shifting learners to higher readiness levels. Vygotsky's (1978) Zone of Proximal Development supports the idea that structured scaffolding helps learners transition toward independence. Similarly, Bruner's (1966) scaffolding theory provides a framework for how instructional support was gradually removed. The model followed by this study mirrors the success reported in Hattie (2009), where short-term focused instruction yielded high effect sizes. Moreover, Black & Wiliam (1998) emphasized that formative feedback during intervention is critical to learner progression.

**Table 1.** Literacy and Numeracy Proficiency Level Distribution

<b>Proficiency Level</b>	<b>Pre-Test (%)</b>	<b>Post-Test (%)</b>
Full Refresher	42	25
Moderate Refresher	20	18
Light Refresher	17	23
Grade Ready	21	34

The paired sample t-test results showed a statistically significant improvement in both literacy and numeracy levels at the 0.05 significance level. This confirms that the changes observed were not due to random variation. According to Cohen (1988), effect size should be considered alongside p-values, and in this case, the medium effect size suggests practical significance. The results resonate with Rosenthal & Rosnow's (2008) argument that effect sizes reflect educational impact better than p-values alone. Furthermore, Glass et al. (1981) advocate for interpreting such findings within the context of educational interventions to ensure relevance. Slavin (2002) emphasized combining quantitative gains with instructional quality as a holistic indicator of program success.

Teachers noted several implementation challenges, including time constraints, lack of learning materials, and large class sizes. These issues align with Darling-Hammond (2000), who highlighted systemic issues as barriers to reform effectiveness. Fullan (2001) stressed that any educational change must be supported institutionally to succeed. The teachers' feedback reflects the structural issues described in the work of Berliner (2006), particularly on resource equity. Similarly, the implementation issues mirror the findings of Levin (2001) on how decentralization and local conditions affect program success. Additionally, Guskey (2002) argued that teacher buy-in is critical for the sustainability of interventions—an area needing improvement in this study.

Teachers reported adapting lesson plans and instructional strategies to align with learner needs, demonstrating pedagogical responsiveness. According to Tomlinson (2003), differentiated instruction based on formative data leads to better outcomes. Teachers used real-time feedback loops, echoing Black & Wiliam's (1998) call for continuous assessment. Instructional design followed principles from Merrill (2002), focusing on task-centered learning. Vygotsky's scaffolding was evident in gradual content difficulty increments. Lastly, teachers adopted collaborative learning strategies as proposed by Johnson & Johnson (1999), allowing peer support to enhance understanding.

From an economic perspective, the success of this short-term intervention indicates a high return on investment. As Hanushek & Woessmann (2008) suggest, improvements in basic skills have long-term impacts on economic productivity. Furthermore, Psacharopoulos (1994) found that investments in early education yield higher economic returns. The cost-efficiency of the program echoes the findings by Levin (2001), who emphasized educational cost-effectiveness analysis. UNESCO (2014) also promotes targeted interventions as a means to achieve Sustainable Development Goal 4. This pilot program provides policymakers with evidence that focused, low-cost interventions can produce measurable academic gains, making them viable for broader implementation.

## CONCLUSION AND RECOMMENDATIONS

The 8-week Learning Recovery Curriculum significantly improved the literacy and numeracy skills of Grade 3 learners in selected public elementary schools in the Bicol Region. Quantitative data demonstrated notable gains, with learners shifting from remedial categories to “Grade Ready” status. Statistical analysis confirmed the significance of these improvements. Additionally, qualitative feedback from teachers revealed practical challenges, yet also highlighted best instructional practices that emerged during implementation.

### Recommendations:

1. **Policy Scale-Up:** The Department of Education should consider scaling up this program nationally, prioritizing regions with low literacy/numeracy scores.
2. **Teacher Training:** Continuous capacity-building initiatives are necessary to equip teachers with adaptive strategies.
3. **Instructional Materials:** Provide sufficient, contextualized learning materials to support effective program delivery.
4. **Monitoring and Evaluation:** Institutionalize real-time progress monitoring to guide responsive teaching.
5. **Economic Analysis:** Conduct cost-benefit evaluations to ensure sustainability and long-term integration into education policy.

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