An Evaluation of the Implementation of the Dual Language Programme (DLP) among Science and Mathematics Teachers

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Abstract: The Dual Language Programme (DLP) is a programme introduced under the foundation of Memartabatkan Bahasa Malaysia Memperkukuh Bahasa Inggeris (MBMMBI). The DLP was first implemented in 2016 at selected schools. As such, researchers had conducted a study to evaluate the implementation of the DLP for science and mathematics which has been used in secondary school based on the CIPP model from the aspect of context, input, process and product. The first objective of this research is to identify the level of context, input, process and product dimensions of the DLP. The second objective is to identify the relationship among the level of context, input, process and product dimensions during the implementation of the DLP with the teachers’ teaching experience. The third objective is to identify the advantages, weaknesses, challenges and suggestions by science and mathematics teachers in realising the DLP. This research had involved 210 teachers who taught science and mathematics in secondary school in Zone Keramat, Kuala Lumpur. This research was conducted using the survey form and interview questions as the research instruments. The data gathered from the research has been analysed using descriptive and inferential statistics by getting the value of the mean score and percentage and also the analysis of Pearson correlation. The data collected from interview were transcribed and analysed using Nvivo software. The result showed that the level of context, input and product dimensions were average while the level of process dimension was high. The research hypothesis was accepted where there was no relationship between context, process and product dimensions with the teachers’ teaching experience. From the interview, we found that the DLP has its advantages and also disadvantages, but the essential steps have been proposed in this research. In conclusion, this research has given a new contribution to science and mathematics teachers in Malaysia to evaluate and improve the implementation of the DLP as whole.

Keywords: Dual Language Programme (DLP), Evaluation, Science, Mathematics

I. INTRODUCTION

The objective of the DLP is to provide the opportunity for students in improving their access and exposure to various types of knowledge in order to compete globally and also to improve students’ career marketability.

II. RESEARCH OBJECTIVE

1. To identify the level of context dimension (the relevance of the DLP to the National Education Principle, the attitude and the level of readiness of the science and mathematics teachers) in implementing the DLP.
2. To identify the level of input dimension (knowledge, skill and confidence of science and mathematics teachers in practising the DLP, instruments, laboratories, flexibility, schedule, exercise and school principal’s support) in implementing the DLP.
3. To identify the level of process dimension (the teaching and learning strategy and the way science and mathematics teachers utilise the DLP to evaluate the students’ work product) in implementing the DLP.
4. To identify level of product dimension (difference in students’ achievement and attitude toward the science and mathematics lessons).
5. To identify the relationship between the level of the dimensions of context, input, process and product in implementing the DLP with teacher’s teaching experience.
6. To identify the advantages, disadvantages, challenges and suggestions from science and mathematics teachers towards the DLP.

III. RESEARCH HYPOTHESIS

Ho1: There is no relationship between the level of the context, input, process and product dimensions in implementing the DLP with the teacher’s teaching experience.

IV. RESEARCH METHODOLOGY

This research was conducted using the survey method in the quantitative and the qualitative form. The sample involved 210 science and mathematics secondary school teachers in the Keramat Zone, Kuala Lumpur. For the interview, five respondents had been selected to answer the given questionnaire. The instruments used in this research were the questionnaire and structured interview questions adapted from Norazilawati (2016) [4,5]. The pilot test had been conducted involving 25 science and mathematics teachers in the Pudu Zone, Kuala Lumpur. The alpha cronbach reliability value was 0.879. The data gathered was analysed using the SPSS software for descriptive and inferential analysis (quantitative) while Nvivo was used to analyse interview transcript (qualitative).

V. RESULT

Table I: Results of objective 1,2,3 and 4 for descriptive analysis.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Mean</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context (the relevance of the DLP to National Education Principle, attitude and the level of science and mathematics teachers’ readiness)</td>
<td>3.31</td>
<td>Moderate</td>
</tr>
<tr>
<td>Input (knowledge, skill and confidence of science and mathematics teachers who were practising the DLP, instruments, laboratories, flexibility, schedule, exercise and school principal’s support)</td>
<td>3.52</td>
<td>Moderate</td>
</tr>
<tr>
<td>Process (teaching and learning strategy and the way science and mathematics teachers who were practising DLP to evaluate students’ work product)</td>
<td>3.81</td>
<td>High</td>
</tr>
<tr>
<td>Product (difference in students’ achievement and attitude towards the science and mathematics lessons)</td>
<td>3.20</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

Table II: Results of objective 5 for inferential analysis. The hypothesis is accepted.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Correlation value</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context (the relevance of the DLP to the National Education Principle, attitude and the level of science and mathematics teachers readiness)</td>
<td>[r = -0.070, p = 0.461 &gt; 0.05].</td>
<td>No relationship</td>
</tr>
<tr>
<td>Input (knowledge, skill and confidence of science and mathematics teachers in practising the DLP, instruments, laboratories, looseness, schedule, exercise and school principle’s support)</td>
<td>[r = -0.040, p = 0.673 &gt; 0.05].</td>
<td>No relationship</td>
</tr>
<tr>
<td>Process (teaching and learning strategy and the way science and mathematics teachers who were practising the DLP, evaluated students’ work)</td>
<td>[r = -0.003, p = 0.973 &gt; 0.05]</td>
<td>No relationship</td>
</tr>
</tbody>
</table>

VI. CONCLUSION

In conclusion, the results from this study showed that the levels of context, input and product dimensions were moderate while the level of process dimension was high. The research hypothesis was accepted where the analysis of Pearson correlation showed that there was no significant relationship between the levels of context, input, process and product dimension in the implementation of the DLP with the science and mathematics teachers’ teaching experience. Generally, the majority of interview respondents said there were many advantages of the DLP such as it managed to help and attract students’ interest to further study in STEM, increased the period of students’ exposure to English language and prepared them for future careers. However, the disadvantages in the DLP cannot be overcome by all the advantages. It has been predicted that the DLP would fail, following in the steps of ETeMS. It is suggested that KPM must take a step forward by introducing other solutions such as providing training.
courses, monitoring and continuous support to all teachers and students in empowering the DLP and we need to improve our English without forgetting our mother tongue. We have to bear in mind that the Malay Language is the nation’s soul.

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