AN UP-AND-RUNNING INDICATOR SYSTEM

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The A-level Information System

The A-level Information System's purpose is to provide information about students' academic progress and achievements. This system is designed to assist educators and students in monitoring and tracking academic performance. It includes features for creating individual student profiles, tracking grades, and generating reports.

The system also supports the process of course selection, enabling students to explore different subjects and pathways. It facilitates the coordination of academic planning and supports the development of personalized learning plans.

The A-level Information System is integrated with other educational tools and resources, ensuring a comprehensive approach to education management. It is a valuable resource for educators, students, and parents, offering a platform for effective communication and collaboration.
Three data tables cover intake characteristics, showing the average per school (or college) for O-level Grade Point Average, an ability test and the occupational level of the Head of Household. Thus Heads of Departments (HODs) can see how their intake compared with the intakes at other schools. They are encouraged by the accompanying text to find schools with comparable intakes and then, throughout the report, to compare their data with that from similar groups.

The next set of tables deals with the A-level results. One table simply shows the average A-grade obtained for each subject in each school, using an UCCA scale (A = 5, B = 4 etc.). This table is important in that it represents raw, unadjusted data which can be directly checked against the school's own record of the A-level results. Thus it serves as a validity check.

The next table reports the mean (average) residual for each school based on controlling for prior achievement (O-levels or GCSEs). For example, below is an extract from one report, showing residuals for eight schools for mathematics:

<table>
<thead>
<tr>
<th>School code</th>
<th>Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOCB</td>
<td>-0.5</td>
</tr>
<tr>
<td>WARD</td>
<td>-0.3</td>
</tr>
<tr>
<td>TRID</td>
<td>-0.2</td>
</tr>
<tr>
<td>WIRY</td>
<td>0.0</td>
</tr>
<tr>
<td>GEZI</td>
<td>0.2</td>
</tr>
<tr>
<td>BRID</td>
<td>0.3</td>
</tr>
<tr>
<td>HACE</td>
<td>0.5</td>
</tr>
<tr>
<td>QUIK</td>
<td>0.6</td>
</tr>
</tbody>
</table>

It is from this table that the Fair Performance Indicators for the subject are drawn. The text emphasises the need to avoid over-interpreting small differences and makes recommendations about the size of residuals which might be considered important, a figure which must vary from table to table depending upon sample sizes. Sample sizes cannot be shown in the tables because this could make the identification of schools possible.

The appendix to the report provides four more tables of residuals in which the following combinations of intake characteristics are taken into account: (i) the ability test (ii) the ability test and prior achievement (iii) the ability test and occupational status of the Head of Household and (iv) ability, prior achievement and occupational status.

Another appendix provides details of the regression equations along with descriptive statistics and intercorrelations. There are many numerate teachers well able to follow the simple regression procedures which have been used in the reports and this appendix is for their information.

Given the eleven reports, one for each of the examination subjects, Headteachers can examine the residual for each department. Knowing that positive residuals suggest the department obtained better results than 'expected' on the basis of the prior achievement of its intake, and a negative residual indicates worse results than 'expected', Heads find a summary such as the following helpful:

<table>
<thead>
<tr>
<th>School code</th>
<th>ENGL.</th>
<th>FRENCH</th>
<th>HISTORY</th>
<th>GEOGR.</th>
<th>PHYSICS</th>
<th>MATHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRID</td>
<td>-0.4</td>
<td>0.9</td>
<td>-0.8</td>
<td>-0.5</td>
<td>-0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>NOCB</td>
<td>-0.8</td>
<td>-0.8</td>
<td>1.0</td>
<td>0.7</td>
<td>-0.3</td>
<td>-0.5</td>
</tr>
<tr>
<td>TRID</td>
<td>-1.0</td>
<td>-0.7</td>
<td>-0.2</td>
<td>0.1</td>
<td>-0.6</td>
<td>-0.2</td>
</tr>
<tr>
<td>QUIK</td>
<td>0.2</td>
<td>0.3</td>
<td>0.4</td>
<td>-0.2</td>
<td>0.5</td>
<td>0.6</td>
</tr>
</tbody>
</table>

These summary tables show that school departments vary considerably and no one school has the 'best' residual in every subject. Next year, also, the residuals will be different again. Thus the information in ALIS serves mainly to assist in monitoring school departments; it does not support the notion of setting schools in competition with each other.

The second report: Attitudes

This report explains how two attitude scales were produced by combining responses to several items (a technique explained by Hazelwood in this volume). Six items dealing with the students' attitudes to the school or college were combined to give a general 'Attitude to the institution' scale. Six items dealing with the extent to which students liked the A-level subject were combined to give an 'attitude to the subject' scale.
Data Collection: Costs and Methods

The collection and reporting of performance indicators is costly. However, to ensure the cost of collection is justified, clear guidelines and standards need to be established. This is important to ensure that the data collected is accurate and reliable. The cost of collection should be weighed against the benefits of using the data to improve educational outcomes. Providing a cost-efficiency framework for data collection and reporting can help institutions compare their costs with the General Pattern.

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The overall aim of the indicator system is to provide meaningful and actionable data to support decision-making. This includes tracking student progress, identifying areas for improvement, and assessing the effectiveness of educational programs. By collecting data from multiple sources, institutions can gain a comprehensive view of their performance and make data-driven decisions.

The data collected should be used to inform and guide policy decisions, program evaluations, and resource allocation. This can help to ensure that educational resources are used effectively and that students receive the support they need to succeed.

The indicator system can also be used to monitor the impact of interventions and to track progress over time. By regularly collecting and analyzing data, institutions can track changes in outcomes and identify areas for improvement.

In conclusion, the collection and reporting of performance indicators is an essential component of an effective educational system. By collecting and using data in a meaningful way, institutions can improve educational outcomes and ensure that students receive the best possible education.

Performance Indicators

The data collected and reported should provide insights into key areas of performance, including student outcomes, program effectiveness, and resource utilization. This information can help to inform policy decisions and to guide the allocation of resources.

The performance indicators should be regularly reviewed and updated to ensure that they remain relevant and useful. By doing so, institutions can ensure that they are using the data to drive improvement and to support continuous improvement.
selected, unannounced times at various locations inside and outside the school. These could pick up unbiased samples of staff demeanour which could then be studied and rated by several raters. This would be expensive but it could be done. We are, however, not advocating it, and not only because of the expense!

Discussion: Features and Limitations of ALIS

ALIS is an information system with a limited focus. It is not a comprehensive monitoring of all aspects of provision. In particular, it deals with 'performance monitoring' as opposed to 'compliance monitoring' (Richards, 1988). It provides indicators of the quality of provision, not just indicators of quantity, and in doing so may help to guide improvements in quality. The system's features may be summarised as follows:

- monitors a discrete part of the general provision;
- the discrete part is one for which there is some consensus on goals;
- multiple outcomes are considered, not only examination results;
- the multiple outcome indicators have good behavioural implications: each student is valued equally (see Chapter 8);
- relevant input indicators are available to promote fair comparisons;
- process variables are collected, including student reports on classroom practice;
- data is pupil-level data specially collected under standardised conditions;
- confidentiality between schools is maintained by the use of codenames;
- the indicators are designed to identify strengths and weaknesses within schools, subject by subject, year by year, not to set schools in competition;
- the system provides feedback which generates ideas about ways to enhance teaching effectiveness;
- the system is designed to provide formative monitoring not summative judgments;
- the system developed over several years and is linked with on-going research

Like almost any mathematical model imposed on a complex system, the technique of regression analysis has limitations and inadequacies. Assumptions of linearity, homoscedasticity and that the predictor is without error can all be challenged. Furthermore validity studies which link quantitative indicators with richer qualitative investigations are urgently needed, as is the investigation of more sophisticated models (Goldstein, 1987; Raudenbush &

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Bryk, 1986). In the meantime the approach is fairer than the use of raw unadjusted grades.

Basically, the university provides what its personnel are best at providing: good quality data based on a research programme. The LEAs aim to provide the sensitive and effective management framework, a role well-suited to their advisers/inspectors. These advisers need some understanding of measurement, statistics and design concepts in order to interpret the data with authority and with all due caution: correlation is not causation.

Acknowledgements

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References

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