Academic Success and School Library Use

Sandra Olën

Department of Information Science, University of South Africa

Data were collected during a longitudinal survey of students undergoing initial teacher education in the Transvaal, South Africa that permitted measures of association to be made between frequency of students' school library use and their subsequent academic success at the tertiary level. No association was found between frequent use and academic success. It is suggested that future investigations need to assess the impact that specific programs in the school library to develop information skills have on students' academic success at the tertiary level. Greater use should be made of qualitative research methodology.

Introduction

School librarians believe in the valuable contribution that a school library can make to students' educational and personal development. It is, however, often pointed out that it is difficult to furnish any concrete proof of this perceived value. When a research project was undertaken in the Transvaal, South Africa that included a longitudinal survey, it became apparent that it would be possible to use certain data to measure the association between frequency of school library use and academic success at the tertiary level. This article focuses on these findings but, in order to put them in context, it is necessary to first look at the purpose and methodology of the full project.

Purpose of the Research Project

A research project surveyed a group of students enrolled for initial teacher education to determine their use and perceptions of the school library. The research was undertaken for a number of reasons.

Several authors point out that in spite of the school library's potential for improving teaching and learning, particularly with regard to literacy and information literacy, it is often underutilized (Bernhard, 1987; Bristow, 1992; Garriock & Wells, 1989; Marland, 1987).

Although various factors have been identified in the literature as contributing to the school library's underutilization, it is asserted that subject teachers play a major role in this regard, because they often lack knowledge of information sources and skills and/or may have negative perceptions of the school library (Best, 1989; Breivik, 1991; Kruger, 1990; Stevenson, 1987).

The majority of schools in South Africa do not have a centralized school library and, with the changes taking place in the country, it was thought important to determine whether existing school libraries were underutilized, and if so why, before going to great expense to establish and maintain a library in each school.
Methodology for Research Project

First, a literature survey of the following aspects was undertaken: the potential role of the school library in the school with particular emphasis on the influence that an education department's philosophy of education has on this role; the contribution that the information curriculum and development of information skills make to pupils' information literacy; the variables that influence school library utilization by teachers and pupils; and the role that the school library and information literacy play in students' initial teacher education.

Second, a longitudinal survey of a group of students was carried out in 1990 when the students entered their initial teacher education, and again in 1993 when they were in their final year, to determine their use and perceptions of the school library.

Finally, some of the models that have been developed and used during inservice teacher education in South Africa by the Shell Education Service and READ Educational Trust were described and discussed by the researcher. This was done to determine whether these models could be adapted for initial teacher education.

The methodology and the findings are discussed at length in a doctoral thesis (Olën 1993a). Also a number of articles have been published dealing with specific aspects, such as students' perceptions of the school library, reasons for underutilization of the school library, and information literacy development during initial teacher education (Olën, 1993b; Olën, 1994; Potgieter & Olën, 1993; Potgieter & Olën, 1994).

The focus of this article is on the frequency of the students' use of the school library during their final year of school and the activities they carried out in the school library, in order to determine whether there was any association between the frequency and type of use and academic success or failure during the period of initial teacher education. The findings are discussed and interpreted with reference to the findings of other researchers.

Survey of Students Entering Initial Teacher Education

The students surveyed had all attended schools that were controlled by the former Transvaal Education Department (a provincial education department that controlled schools attended by white pupils only) in South Africa. They therefore had access to school libraries staffed by either a full-time or part-time school librarian throughout their primary and secondary schooling. Students from other former education departments were not included, because then there would have been no certainty that they had always had access to a school library. In South Africa many schools, particularly primary schools, do not have centralized school libraries, but have only boxes of books or classroom collections.

During the first survey in 1990, completed questionnaires were obtained from 603 students who had enrolled for the first time at eight different
tertiary institutions that provided initial teacher education in the (former) Transvaal, South Africa. As mentioned above, the purpose of this first survey was to obtain information on student teachers' use and perceptions of the school library when entering their initial education. One reason for the second, or follow-up, survey was to determine whether the students' and their lecturers' use of the college or university library was greater than the use they and their subject teachers had made of the school library. A second purpose was to determine whether the students' perceptions with regard to the school library, their awareness of information sources and services, had changed during the period of initial education.

*Use of School Library in Matric (Grade 12)*

It is apparent from Figure 1 that while the students were in their final school year, 311 or 51.6% of them visited the school library only once or twice during the year or never visited it at all.

In her survey of the use patterns of second and fourth year pupils in six West Midlands schools, Daniels (1983) also found that many pupils rarely visited their school media center for any purpose. "Less than 15% of respondents normally used the provision daily" (p. 50). In this survey only 1.5% of the respondents used the school library daily, but one must bear in mind that these pupils were more senior than those who participated in Daniel's survey. In Leightonfield's (1983) survey of library use, carried out on students

![Frequency of Use](image_url)

*Figure 1. Number of times students visited school library.*
entering the Dandenong College of Technical and Further Education (Australia) in 1982 and 1983, it was found that 48% of the students had used the school library regularly. The questionnaire given to students in the Leighfield study included four possible responses: regularly, now and then, hardly ever, and never. In the present questionnaire provision was made for six different responses and so it is difficult to compare the findings of the two surveys. If “regularly” were to include the first three categories used in the questionnaire in the present survey, then the percentage of regular users would be only 22%.

**Activities in the School Library**

Figure 2 indicates the activities the students carried out in the school library and the percentage of students who indicated that they did or did not carry out these activities. It is clear that those who made use of the school library mainly went there to find information for projects (48.9% for activity 2) and to consult ready reference books (43.3% for activity 4). Because these percentages are very similar, with only a 5.6% discrepancy, a computer printout listing all the combinations of activities was obtained in order to establish the extent to which activities 2 and 4 coincided.

It is apparent from Table 1 that of the 261 students who consulted reference works, 184 or 70.5% also found information for projects.

Although it is possible they used reference works for other purposes, it is likely that pupils concentrate on reference works as information sources when finding information for projects. This corresponds with the finding by

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**Figure 2. Activities carried out by students in the school library.**
Table 1
Frequency of Students Carrying Out Two Specific Activities in the School Library

<table>
<thead>
<tr>
<th>Activity 2</th>
<th>N</th>
<th>Activity 4</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information projects</td>
<td></td>
<td>Used reference books</td>
<td></td>
</tr>
<tr>
<td>2 only</td>
<td>57</td>
<td>4 only</td>
<td>46</td>
</tr>
<tr>
<td>2 + other</td>
<td>54</td>
<td>4 + other</td>
<td>31</td>
</tr>
<tr>
<td>(but not 4)</td>
<td></td>
<td>(but not 2)</td>
<td></td>
</tr>
<tr>
<td>2 + 4</td>
<td>184</td>
<td>4 + 2</td>
<td>184</td>
</tr>
</tbody>
</table>

Total number of students 295
Total number of students 261

Overduin and De Wit (1986) that reference works were those most heavily used by pupils in schools of the former Transvaal Education Department, although the pupils in their survey were in Standards 6 to 9 (grades 8 to 11). It is interesting to note that although the percentages differ, the findings in an American survey carried out by Jay (1971) were similar. In her survey, the pupils indicated that 74% of their use of the school libraries was for projects given to them by teachers. Just over a quarter (25.4%) of the respondents in the present survey used the school libraries as a place in which to do homework or study. Rudduck and Hopkins (1984) found that libraries were seen by many 6th formers as places to sit and work in rather than as a collection of resources that could be consulted in order to further their inquiry. In order to determine what percentage of the students who took part in the present survey had used the school library only for this purpose, the list indicating the frequency of activities in combination was checked, but only 26 or 4.3% of the students had used the school library solely for this purpose.

Only 32 students indicated that they had done activities that were other than those listed. The activities most often specified were borrowing audiovisual media (e.g., sound cassettes), attending the screening of a video or film, and the consultation of old matriculation examination papers kept in the school library.

Second Survey of Students During Final Year of Teacher Education
By the middle of 1993, when the follow-up survey was carried out, the students were at six institutions as two of the colleges of education had been incorporated into two of the others. By this time a number of the students had canceled or failed their courses. In Table 2 the second column indicates the number of students who took part in the first survey. The third column shows the number of students in the original population who were still
registered for an Higher Education Diploma (HED) or a teaching degree in 1993; in the fourth column the number of those who actually completed the follow-up questionnaire is indicated. From Table 2 it can be seen that, of the total number of 603 students in the original population, 369 were still registered for teaching degrees or diplomas. The 306 students who actually completed the follow-up questionnaires comprised 82.9% of the 369 still registered for teaching degrees or diplomas. The 306 students were, however, only 50.7% of the original 603 students who participated in the survey.

It was also found that the total number of students who had canceled their degrees or diplomas at the six institutions was 177; 14 students had graduated and left university at the end of 1992 with a nonteaching degree; 12 students had leave of absence or were reported as being inactive; 18 students were still registered but had changed to a nonteaching degree; and 13 students in 1993 were registered for an honors degree. Thus if these numbers are added together (369 + 177 + 14 + 12 + 18 + 13) they are found to equal the original population of 603 students.

Students’ Subsequent Academic Achievement Cross-tabulated by Frequency of School Library Use

It is pointed out above that the number of students who had canceled was 177. The total number of those who had failed one or more years during the period in question (i.e., 1990-1993) was 33 students. Thus the total number of students who had either canceled or failed during the period from 1990 to 1993 was 210 students. It is possible that some of the students who canceled may have registered at a different tertiary institution for a different degree or diploma in the following year. However, as these students were no longer registered at the original college of education or university, it is assumed that they were academically unsuccessful. The remainder of the 603 students who participated in the first survey were all registered students, except for the 14

<table>
<thead>
<tr>
<th>College/ University</th>
<th>N in first survey 1990</th>
<th>N registered in 1993</th>
<th>N in follow-up survey 1993</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>A + C</td>
<td>77</td>
<td>46</td>
<td>33</td>
<td>71.7</td>
</tr>
<tr>
<td>B + D</td>
<td>241</td>
<td>169</td>
<td>151</td>
<td>89.4</td>
</tr>
<tr>
<td>E</td>
<td>77</td>
<td>60</td>
<td>50</td>
<td>83.3</td>
</tr>
<tr>
<td>F</td>
<td>92</td>
<td>48</td>
<td>38</td>
<td>79.2</td>
</tr>
<tr>
<td>G</td>
<td>99</td>
<td>38</td>
<td>26</td>
<td>68.4</td>
</tr>
<tr>
<td>H</td>
<td>17</td>
<td>8</td>
<td>8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>603</td>
<td>369</td>
<td>306</td>
<td></td>
</tr>
</tbody>
</table>
students who had already graduated and the 12 who were on leave of absence. These students constitute the group that is regarded as academically successful.

The data obtained from the first questionnaire in 1990 were used to measure the association between the two variables. That is, a comparison was made between the frequency of use of the school library by the group of students who had canceled or failed with the group who may be regarded as academically successful. These were the students who registered in 1993 for their fourth and final year of a teaching degree, plus students who had graduated with a Bachelors degree at the end of 1992, plus students who had passed but who had changed to a nonteaching degree such as an honors degree; a total of 393 students.

The cross-tabulation was done using the SAS statistical package (SAS/STAT User's Guide, Version 6, 1990) and a value for Cramer's V (a chi-square based correlation coefficient) and a \( p \) value for the chi-square were obtained. The value of Cramer’s V obtained was 0.130, and this indicates no association between the variables. However, as the \( p \) value obtained for the chi-square was 0.071, it was decided to compare the observed data with the expected data, even though there is no association. The observed data are shown in Table 3 and the expected data in Table 4. Figures have been rounded off to the first digit after the decimal point. Although it may appear peculiar to indicate students as fractions, this is nevertheless statistically correct.

When the expected data are subtracted from the observed data the deviation is obtained. The deviation and contribution to chi-square (cell chi-square) calculations are shown in Table 5 and Table 6 respectively. Figures for cell chi-squares have been rounded off to two digits after the decimal point. It can be seen from Table 5 that there is a deviation between the expected and observed data in the column for the “never” responses. The value for the cell chi-square in the same column indicates that the deviation is significant. Therefore, there is a weak association between the number of

<table>
<thead>
<tr>
<th>School library use</th>
<th>Every day</th>
<th>Sever. times a week</th>
<th>Once a week</th>
<th>Once/ twice a month</th>
<th>Once/twice a year</th>
<th>Never</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancelled and failed</td>
<td>4</td>
<td>23</td>
<td>28</td>
<td>55</td>
<td>82</td>
<td>18</td>
<td>210</td>
</tr>
<tr>
<td>Successful</td>
<td>5</td>
<td>32</td>
<td>41</td>
<td>104</td>
<td>143</td>
<td>68</td>
<td>393</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>55</td>
<td>69</td>
<td>159</td>
<td>225</td>
<td>86</td>
<td>603</td>
</tr>
</tbody>
</table>
Table 4
Academic Achievement by Frequency of School Library Use: Expected Frequency

<table>
<thead>
<tr>
<th>School library use</th>
<th>Every day</th>
<th>Sever. times a week</th>
<th>Once a week</th>
<th>Once/twice a month</th>
<th>Once/twice a year</th>
<th>Never</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancelled and failed</td>
<td>3.1</td>
<td>19.2</td>
<td>24.0</td>
<td>55.4</td>
<td>78.4</td>
<td>29.9</td>
<td>210</td>
</tr>
<tr>
<td>Successful</td>
<td>5.9</td>
<td>35.8</td>
<td>45.0</td>
<td>103.6</td>
<td>146.6</td>
<td>56.1</td>
<td>393</td>
</tr>
<tr>
<td>Total</td>
<td>9.0</td>
<td>55.0</td>
<td>69.0</td>
<td>159.0</td>
<td>225.0</td>
<td>86.0</td>
<td>603</td>
</tr>
</tbody>
</table>

the students who never used the school library and the students in the group that was academically successful.

Interpretation

It was expected that the findings would confirm an association between students who made frequent use of the school library and those who proved to be academically successful. Cross-tabulations of students' academic achievement by each activity carried out in the school library were also made, but no association was found between the students' academic achievement and any of the specific activities. Although these findings are disappointing, it must be remembered that this was not a representative sample of all the students who had written the matric examination and were entering tertiary institutions. It was not even a representative sample of students entering initial teacher education. As explained in the introduction it was a specific population of students entering initial teacher education, and so the findings cannot be generalized. It is also possible that if a representative sample of TED students had been selected, or a sample of students who had written the matric examination of another education department, the findings might have been different.

Table 5
Academic Achievement by Frequency of School Library Use: Deviation

<table>
<thead>
<tr>
<th>School library use</th>
<th>Every day</th>
<th>Sever. times a week</th>
<th>Once a week</th>
<th>Once/twice a month</th>
<th>Once/twice a year</th>
<th>Never</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancelled and failed</td>
<td>0.9</td>
<td>3.8</td>
<td>4.0</td>
<td>-0.4</td>
<td>3.6</td>
<td>-11.9</td>
<td>210</td>
</tr>
<tr>
<td>Successful</td>
<td>-0.9</td>
<td>-3.8</td>
<td>-4.0</td>
<td>0.4</td>
<td>-3.6</td>
<td>11.9</td>
<td>393</td>
</tr>
<tr>
<td>Total</td>
<td>9.0</td>
<td>5.0</td>
<td>69.0</td>
<td>159.0</td>
<td>225.0</td>
<td>86.0</td>
<td>603</td>
</tr>
</tbody>
</table>
### Table 6

<table>
<thead>
<tr>
<th>School library use</th>
<th>Every day</th>
<th>Sev. times a week</th>
<th>Once a week</th>
<th>Once/twice a month</th>
<th>Once/twice a year</th>
<th>Never</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancelled and failed</td>
<td>0.24</td>
<td>0.77</td>
<td>0.65</td>
<td>0.002</td>
<td>0.17</td>
<td>4.77</td>
<td>210</td>
</tr>
<tr>
<td>Successful</td>
<td>0.13</td>
<td>0.41</td>
<td>0.35</td>
<td>0.001</td>
<td>0.09</td>
<td>2.55</td>
<td>393</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>55</td>
<td>69</td>
<td>159</td>
<td>225</td>
<td>86</td>
<td>603</td>
</tr>
</tbody>
</table>

However, if the above finding is compared with that of Walker as cited in Greve (1974) there is cause for concern. According to Greve, Walker carried out a study in 1963 and tested the hypothesis that there is no significant difference in academic achievement at the University of Illinois among students in the several schools and colleges within the University who have lived in communities with good library service and those students who have lived in communities with poor or no library service. (p. 22)

On completion of his study, Walker (Greve, 1974) concluded that when the measure of college achievement is the grade-point average for two semesters of the freshman year, the evidence did not support the assumption that access to library service is linked to academic achievement in college.

Didier (1982) found that although access to school libraries is greater in schools with school library personnel, the pupils' achievement is not necessarily improved even where there is such access.

The studies of Walker and Didier both made use of quantitative methodology, which necessarily provides incomplete information. The aspect of the comprehensive study reported in this article also employed quantitative methodology, focusing on the association between frequency of school library use and academic success at the tertiary level. This means factors other than frequency of school library use that could influence academic achievement, such as the kind of activities carried out in the school library, still need to be investigated. This calls for qualitative methodology, which is receiving increasing acceptance in the social sciences including the field of library and information science. With qualitative methodology it would be possible to assess the impact that specific programs in the school library to develop information skills have on students' academic success at the tertiary level.

### Conclusion

It might be concluded that the TED program was one that did not require information skills for academic success. The TED did provide guidelines for
the formulation and implementation of a school library policy, as well as encouraging the subject teachers to cooperate with the school librarian to develop students’ information skills. However, it is possible that teachers might not always have had the necessary time or expertise to set projects likely to develop the information skills needed by academically successful students at tertiary institutions. Students might often have been able to complete their projects successfully by merely copying information from reference sources.

This survey of student teachers found no association between the frequency of students’ school library use and their subsequent academic success at colleges of education and universities. The earlier findings of Walker, as reported by Greve (1974) and Didier (1982) were similar. Even so, one cannot come to a general conclusion that frequent school library use has no effect on academic achievement because, as explained above, a representative sample of students was not selected for the present study. Also, both this and the earlier studies used quantitative research methods. Using qualitative methodology, future studies should try to determine the impact that specific programs in school libraries to develop information skills have on students’ academic success at the tertiary level.

References


