Chapter 3
Are Secondary School Students from the Middle East Independent Learners?

F.Rashid-Doubell, T.P. Doubell, R.O’Sullivan, K. Elmusharaf
Royal College Surgeons in Ireland-Medical University of Bahrain

Abstract: Several factors influence the quality of higher education, inputs such as quality of students and teachers, the curriculum and the pedagogy. The purpose of our research was to examine whether there were any differences in learner autonomy as measured by self-directed learning readiness (SDLR) between secondary school students who entered medicine with a local Bahraini school certificate and those students who entered with an international school certificate. Using a modified questionnaire we identified how elements such as self-management, desire for learning, self-control and total SDLR scores varied in relation to the student’s previous exit award: ‘A’ levels (or equivalent) or Bahrain Secondary School (BSS) certificate. BSS certificate students had a significantly lower mean standardised desire for learning score (63.5) compared to those entering with ‘A’ levels or equivalent (73.6; p=0.003). BSS certificate students also had a significantly lower mean total self-directed learning readiness score (192.3) compared to those students with the ‘A’ levels and equivalent (214.5; p=0.015). When we controlled for all the other factors, secondary school award certificate was the only independent predictor of self-control (standardised beta 0.4; p=0.02) and SDLR (standardised beta 0.36; p=0.043). Social shifts and changing economic workforce requirements both regionally and globally are driving an increased interest in higher education in the Middle East. Students who exit with a local secondary school certificate are finding it difficult to prepare themselves for independent learning in medical school. This poses a challenge for higher education institutions bringing a more learner autonomous type of curriculum to the Middle East.

Keywords: Self-directed learning; tertiary education; secondary school; medical student; culture; Middle East

Introduction

Higher education in the Middle East
The Middle East is a loose term, not always used to describe the same territory. It usually includes the Arab countries from Egypt east to the Persian Gulf, plus Israel and Iran. Middle East for the purposes of our study contains a number of Arab countries including Bahrain each with their own economic, political and social systems. Throughout history and societies of the Arab countries, higher learning has been deeply rooted and its people have placed a high value on education at all levels.
An essential goal of most Middle Eastern families being to achieve the best possible education for their children.

Public or state universities were established in the 1960s after the Gulf Cooperation Council countries had secured their own independence. These institutions were prone to producing poor results and suffered a lack of resources and training opportunities for staff (Wilkens & Masri, 2011). This lack of innovation in teaching and learning provided the impetus during the 1990s to shift favour from public institutions to private universities, but these latter institutions progress in improving performance of students was also negligible (Romani, 2009).

In 2003, the United Nations Development Programme published its second report on Arab Human Development, criticising the poor state of higher education throughout the region and urged Arab states to invest heavily in this sector (Fergany, El Hamed, & Hunaidi, 2002). A second report almost ten years later in 2011, describing higher education reform in the Arab world by the U.S. – Islamic World Forum reported that more than 80% of all universities in Bahrain, Lebanon, Palestine, Qatar and UAE were from the private sector (Klugman, 2011). Nonetheless, public sector institutions continue to serve the majority of the population throughout the region, but with overcrowding and shortage of resources it makes it more difficult to place the emphasis on the key ingredients of quality teaching, pedagogy, faculty and curriculum.

Social shifts and changing economic workforce requirements both regionally and globally are driving an increased interest in higher education in the Middle East. There are currently 1,239 Universities listed with over 50 of them being branch campuses. Bringing a more Western type of higher education to this region is the main aim of many international institutions with plans for global expansion. A good example of this are the countries of United Arab Emirates and Qatar who have established forty foreign branch campuses of Western universities over the last 10 years. But there are obviously challenges to bringing Western way of teaching and learning into the Arab Gulf region.

Secondary to tertiary learning in Middle East

Several factors influence the quality of higher education, inputs such as quality of student, teachers, curriculum and pedagogy. The academic preparedness of the graduates of secondary school represents an important factor for higher education success. The continuing emphasis at the secondary level of rote memorisation rather than focussing on techniques such as critical thinking has contributed to a pool of applicants that are underprepared for higher level tertiary learning (Wilkens & Masri, 2011). Students lack the requisite abilities of being analytical and autonomous learners, skills needed to study effectively at the tertiary level, this being an issue in many countries in the Middle East. Higher education does not take place in vacuum. Linkages between secondary and tertiary institutions are of paramount importance to improve the quality of the university entrant.

Self-directed learning

Promoting life-long learning amongst health professionals has been the main aim of a radical shake-up of medical education (Jackson & Calman, 2006). Students have to move from the memorisation of facts to problem-solving and self-directed study, these two skills have found to be necessary for the practice of medicine (Barrows, 1983). Modern medical curricula have also been transformed in moving from a passive,
didactic teacher-dominated approach to a more student-centred, active, self-directed learning one (Shin, Haynes, & Johnston, 1993). The focus has been to develop future doctors who are less responding to instruction and taking more responsibility of their own learning. The importance of self-directed learning cannot be overstated; some authors have gone as far as suggesting that neglecting the development of self-directed learning is considered a serious disadvantage for the student learner (Kek & Huijser, 2009). Part of their life-long learning process involves the need for students to adopt self-directed learning readiness often described as the process of deciding what to learn, and to what depth and breadth (Candy, 1991). Others have defined the concept of learning readiness as the degree to which the individual possesses the attitudes, abilities and traits necessary for self-directed learning (Wiley, 1983). The study of self-direction has been explored primarily from two perspectives: either by the process (Brockett & Hiemstra, 1991) exemplified by the Personal Responsibility Orientation Model (Brockett & Hiemstra, 1991) or from personal attributes as described in Garrison’s Three-Dimensional Model, (Garrison, 1997). Personal attributes such as desire for learning, self-control and self-management. Several models have been put forward to understand self-directed learning and focus on either process or attributes (Song & Hill, 2007).

The impact of culture on higher education

The globalisation of medical education has been rapid and intensive with very few medical schools escaping the effect (Jippes & Majoor, 2011). This ability of self-directed learning readiness may become one of the most important traits learners must have to survive, succeed and improve on their own (Guglielmino & Roberts, 1992). When it comes to self-directed learning readiness, one thing that is widely agreed upon is the need for more research to explore how culture impacts on self-directed learning readiness in students outside of North America and Europe in this world of globalised medical education (Gukas, 2007).

Frambach and colleagues explored the effect of culture on self-directed learning by examining three medical schools situated in Europe, the Middle East and East Asia. They concluded that uncertainty, tradition and hierarchy impacted on self-directed learning, thus impeding the uptake of the new learning approach by non-Western students but over time these two groups adapted to their learning environments (Frambach et al., 2012). Only a handful of studies have gone on to explore the cultural impact on the preparedness of students for self-directed learning, Ahmad and Majid’s appraisal was one such study. They examined the influence of Malay culture on self-directed learning among adult learners. Their study showed that culture can strongly influence the development of self-directed learning readiness (Ahmad & Majid, 2010). A second study done with South Korean and American college students examined the relationship between self-directed learning readiness and cultural values between the two groups of students. Their findings coincided with those of Braman (Braman, 1998) showing that self-directed learning readiness had a strong relationship with individualism (Lee & Lindner, 2005). Most cultural studies describe the notion of moving students from being spoon-fed to becoming a more autonomous andragogical learner, someone who takes responsibility for meeting their own learning needs (Fisher, King & Tague, 2001).

Defining culture is difficult with many explanations being put forward. Triandis attempted to define culture as, “functions to improve the adaptation of members of the same culture to a particular ecology, and includes the knowledge that people need to
have in order to function effectively in their social environment (Triandis, 2000). Others have used societal terms to define culture such as ‘the glue that hold its members together through a common language, food, religion, beliefs, aspirations and challenges” (Abdullah, 1996). Whatever the definitive explanation, we can categorise cultural identity broadly as either collectivist or individualist. In a collectivist society members do not speak up, or even express a contradictory point (Beamer & Varner, 2008). In an individualistic culture, individuals organise themselves into loosely affiliated societies, primarily taking care of themselves and their immediate family (Hofstede, 2001). An important difference between collectivist and individualist cultures is the relative importance each places on the goals of the individual compared to the goals of the group (Braman, 1998). Children from collectivist cultures such as those living in the Middle East are situated in an environment which revolves around obedience, reliability, duty, cleanliness and order (Triandis, 2004). Taking charge of their own learning poses a major challenge to the majority of students entering tertiary education in the Arabian Gulf region (Al-Saadi, 2011a). Grow, 1991 explains that educational practices in public school and universities in the region, do more to perpetuate dependency than to create self-direction (Grow, 1991). This practice is further emphasised by a recent report describing the “spoon-feeding learning model” practiced by students and teachers in Oman (Al-Saadi, 2011b). Al-Saadi argues that learning becomes more effective when learners are in control of their learning and aware of the learning process and of themselves as learners.

The major goal of any tertiary institution should be to provide students with the necessary competencies to become lifelong learners, to bridge the gap between secondary and tertiary education. This is the emphasis of work done by Patterson and his colleagues in Canada with nursing students (Patterson, Crooks, & Lunyk-Child, 2002). They proposed six competencies required for students to become self-directed learners.

**Research question and objectives**

The objective of this study was to identify any differences in self-directed readiness between students who entered our medicine programme with a local Bahraini school certificate and those students who entered with an international school certificate. This study forms part of a larger study which introduced an intervention to enhance self-directed learning readiness (SDLR) in students regardless of their educational backgrounds.

**Methods**

**Setting**

Our study was conducted on the branch campus of the Royal College of Surgeons in Ireland (RCSI-Bahrain) situated in Bahrain; an international university which delivers an Irish five-year undergraduate medical curriculum to students from all over the world with local Bahraini students making 40% of the overall cohort. The students varied in their ethnic background and their approaches to learning, amongst other things.

In the first year the cohort was composed of three distinct categories of students. The first category consisted of those who have directly entered the programme by either having appropriate ‘A’ level qualifications or equivalent (International Baccalaureate
or High School Diploma). The second category was composed of students entering through the Foundation Year (Foundation Year is our premedicine programme, which students have to successfully pass before they can move into the five-year programme) with a Bahrain Secondary School (BSS) certificate. The third category consisted of those students who already had a university degree.

Study design
In a cross-sectional study, we explored self-directed readiness amongst our first year medical students before they had undertaken any scheduled classes at the institution. Ethical permission was sought and obtained from the RCSI-Bahrain Research Ethics Committee. In the first week of the first semester, students were given a brief overview of the study and invited to participate and if they agreed, written consent was obtained. Paper copies of the self-evaluation tool were then distributed to student who had consented, and they were asked to complete the questionnaire.

Participants
All 150 students’ first year medical students in semester one were invited to participate in the study. From the first year cohort 65 students responded and completed the questionnaire (response rate 43%). The inclusion criterion was set to include those students with a BSSC or ‘A’ levels or equivalent who directly entered the programme or who came through the Foundation Year (50 students were included). Students who were excluded from the study were those entering the programme who possessed a Higher Education exit award or repeating students (15 students were excluded).

Tool
The learning readiness of undergraduate medical students was determined using a scale originally devised by Fisher and his colleagues (Fisher et al., 2001) and later used to assess learning readiness amongst physiology students (Abraham et al., 2011). The SDLR questionnaire is a self-evaluation tool determining the SDLR of an individual student. Our questionnaire was a modification of one previously used by Fisher with nursing students (Fisher et al., 2001). The questionnaire was divided into three subcategories namely: self-management (9 items); desire for learning (13 items); self-control (11 items), giving a total of 33 items. Students were requested to respond to each item on a Likert scale (where 5=always, 4=often, 3=sometimes, 2=seldom, 1=never). The scale gave us the opportunity to calculate their subcategory scores as well as their total self-directed learning readiness score. All items were scored in a forward manner and no reverse manner questions were posed.

The validity of the modified questionnaire was determined by content validity (exploring pertinent literature) and face validity (experts’ opinion on the modified questionnaire). The reliability of the internal consistency was determined by calculating Cronbach’s alpha for self-management (0.7), desire for learning (0.8) and self-control (0.76) as well as the overall value for self-directed learning readiness (0.9).

Data management
We calculated the total for each subcategory (self-management, desire for learning and self-control) by adding the scores of each item in that subcategory. The total scores were then standardized out of 100 by dividing the total score by the maximum score possible in that subcategory and multiplying by one hundred. For example, in the self-
management scale there are 9 items with each item having a maximum score of 5 and so actual student score was divided by 45 and multiplied by 100 to provide a standardized subcategory score out of a 100. The three subcategory scores were then added together to produce the standardized self-directed learning readiness total out of three hundred.

**Statistical analysis**

The data obtained from the questionnaire were entered, cleaned and prepared for analysis using IBM SPSS Statistics for Windows (IBM Corp., Armonk, NY, USA); data were summarised and presented using appropriate statistics: mean (standard deviation) and frequency (percentage) for numerical and categorical variables respectively. Differences of SDLR and its three subcategories (self-management, desire for learning and self-control) in relation to students’ characteristics were compared using independent student’s t-test and 95% confidence intervals (95% CI) for the means. All statistical tests were two-sided. A Type I error rate of $p \leq 0.05$ was used for statistical significance. Furthermore, to address our primary research question, a multivariate regression analysis was performed to see the net effects of each of the students’ characteristics (independent variables) in explaining variation in SDLR and its three subcategories.

**Results and Discussion**

**Participants’ characteristics**

The majority of the participants were female (66%). The predominant age group of students was less than 20 years (56%). The students that left school with a Bahrain Secondary School Certificate made up of 28% of the respondents. Those entering from the RCSI-Bahrain Foundation Year course made up the largest proportion of students entering the Junior Cycle (58%). The majority of the students were residents of the Middle East (86%) and the remainders were residents in Asia. Table 1 summarises the general characteristics of the participants.

<table>
<thead>
<tr>
<th>Main group</th>
<th>Sub-group</th>
<th>Frequency</th>
<th>Percent</th>
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<tr>
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<td>&lt; 20 years</td>
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<td>56</td>
</tr>
<tr>
<td></td>
<td>20 years or more</td>
<td>22</td>
<td>44</td>
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<td>Gender</td>
<td>Male</td>
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<td>34</td>
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<td></td>
<td>Female</td>
<td>33</td>
<td>66</td>
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<td>Secondary school award</td>
<td>Bahrain Secondary School Certificate</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>IB and A levels</td>
<td>36</td>
<td>72</td>
</tr>
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<td>Country of residence of student</td>
<td>Middle Eastern</td>
<td>43</td>
<td>86</td>
</tr>
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<td></td>
<td>Asian</td>
<td>7</td>
<td>14</td>
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<tr>
<td>Type of entry into Junior Cycle</td>
<td>Foundation Year</td>
<td>29</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>Direct Entry</td>
<td>21</td>
<td>42</td>
</tr>
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</table>
Descriptive statistics

Analysis of data revealed large differences between the maximum and minimum values for each subcategory, self-management (35.5, 88.9), desire for learning (40, 90.77), self-control (43.6, 90.9) and the overall SDLR score (126.9, 260.8). However, the mean scores (SD) for self-management was 68.6 (11.4), for desire for learning was 70.8 (11.2), for self-control was 68.9 (10.7), and for self-directed learning readiness was 208.3 (29.4). The descriptive statistics of the subcategories and the total SDLR are shown in Table 2.

Table 2. Descriptive statistics of the three subcategories and combined SDLR score of the participants

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Self-management</th>
<th>Desire for learning</th>
<th>Self-control</th>
<th>SDLR</th>
</tr>
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<tr>
<td>Mean</td>
<td>68.6</td>
<td>70.8</td>
<td>68.9</td>
<td>208.3</td>
</tr>
<tr>
<td>Std. Error of Mean</td>
<td>1.6</td>
<td>1.6</td>
<td>1.5</td>
<td>4.2</td>
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<tr>
<td>Median</td>
<td>71.1</td>
<td>72.3</td>
<td>70</td>
<td>207.7</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>11.4</td>
<td>11.2</td>
<td>10.7</td>
<td>29.4</td>
</tr>
<tr>
<td>Minimum</td>
<td>35.6</td>
<td>40</td>
<td>43.6</td>
<td>126.9</td>
</tr>
<tr>
<td>Maximum</td>
<td>88.9</td>
<td>90.77</td>
<td>90.9</td>
<td>260.8</td>
</tr>
</tbody>
</table>

Determinants of SDLR

The univariate results are shown in Table 3, indicating the mean difference between the two groups with 95% confidence interval as well as the p value.

When the total SDLR scores and the three subcategories were compared among different age groups there was little difference between those students who were less than 20-years-old and those who were older. Country of residence also had no impact on any of the three subcategories and neither did type of entry into the Junior Cycle.

Where there was a statistically significant difference it was between male and females students desire for learning, with male students having a higher desire for learning score (75.6) than females (68.3; 95% CI of the Difference: 0.8 to 13.7, p value: 0.029). The largest difference was found between students who had entered with a local Bahrain Secondary School Certificate and those students who were admitted with ‘A’ levels or an equivalent such as an IB or High School Diploma.

Students with IB and ‘A’ levels tended to a higher more desire for learning score (73.6) compared to students with BSSC (63.5) (95% CI of the Difference -16.6 to -3.6, p value 0.003). They also tended to have greater self-control (71.2) compared to students with BSSC (63.1) (95% CI of the Difference -15.8 to -0.4, p value 0.04).

The differences between the total SDLR scores amongst these two groups were also significantly higher among students with IB and ‘A’ levels (214.5) than students with BSSC (192.3) (95% CI of the Difference -39.8 to -4.5, p value=0.015).
<table>
<thead>
<tr>
<th></th>
<th>SM</th>
<th>DFL</th>
<th>SC</th>
<th>SDL</th>
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<td>68.4</td>
<td>73.1</td>
<td>68.3</td>
<td>209.8</td>
</tr>
<tr>
<td>20 years or more</td>
<td>68.8</td>
<td>67.9</td>
<td>69.8</td>
<td>206.4</td>
</tr>
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<td>Mean Difference</td>
<td>0.4</td>
<td>5.2</td>
<td>1.4</td>
<td>3.4</td>
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<td>95% CI of the Difference</td>
<td>-7 to 6.2</td>
<td>-1.1 to 11.5</td>
<td>-7.6 to 4.8</td>
<td>-13.6 to 20.3</td>
</tr>
<tr>
<td>P value</td>
<td>0.91</td>
<td>0.1</td>
<td>0.64</td>
<td>0.69</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Male</td>
<td>69.5</td>
<td>75.6</td>
<td>70.5</td>
<td>215.6</td>
</tr>
<tr>
<td>Female</td>
<td>68.1</td>
<td>68.3</td>
<td>68.2</td>
<td>204.6</td>
</tr>
<tr>
<td>Mean Difference</td>
<td>1.5</td>
<td>7.2</td>
<td>2.3</td>
<td>11.0</td>
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<td>95% CI of the Difference</td>
<td>-5.5 to 8.4</td>
<td>0.8 to 13.7</td>
<td>-4.2 to 8.8</td>
<td>-6.5 to 28.5</td>
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<tr>
<td>P value</td>
<td>0.673</td>
<td>0.029</td>
<td>0.474</td>
<td>0.213</td>
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<td>BSSC</td>
<td>65.7</td>
<td>63.5</td>
<td>63.1</td>
<td>192.3</td>
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<td>IB and A levels</td>
<td>69.7</td>
<td>73.6</td>
<td>71.2</td>
<td>214.5</td>
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<tr>
<td>Mean Difference</td>
<td>-4.0</td>
<td>-10.1</td>
<td>-8.1</td>
<td>-22.2</td>
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<td>95% CI of the Difference</td>
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<td>-16.6 to -3.6</td>
<td>-15.8 to -0.4</td>
<td>-39.8 to -4.5</td>
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<tr>
<td>P value</td>
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<td>71.0</td>
<td>69.0</td>
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<td>Asian</td>
<td>68.3</td>
<td>69.5</td>
<td>68.6</td>
<td>206.3</td>
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<td>Mean Difference</td>
<td>0.4</td>
<td>1.6</td>
<td>0.4</td>
<td>2.4</td>
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<td>95% CI of the Difference</td>
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<td>-7.7 to 10.8</td>
<td>-8.5 to 9.3</td>
<td>-22 to 26.7</td>
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<tr>
<td>P value</td>
<td>0.94</td>
<td>0.73</td>
<td>0.92</td>
<td>0.85</td>
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<td>68.4</td>
<td>67.8</td>
<td>205.7</td>
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<tr>
<td>Direct Entry</td>
<td>67.3</td>
<td>74.1</td>
<td>70.6</td>
<td>212.0</td>
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<tr>
<td>Mean Difference</td>
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<td>-5.8</td>
<td>-2.8</td>
<td>-6.3</td>
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<tr>
<td>95% CI of the Difference</td>
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<td>-12 to 0.5</td>
<td>-9 to 3.4</td>
<td>-23.3 to 10.7</td>
</tr>
<tr>
<td>P value</td>
<td>0.51</td>
<td>0.071</td>
<td>0.37</td>
<td>0.46</td>
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</table>
Predicting factors which affect SDLR

Table 4 shows the multivariate regression analysis which allowed us to explore the net effects of each of the students’ characteristics (independent variables) in explaining variation in SDLR and the three subcategories. When we controlled for all other factors, secondary school certificate was the only independent predictor of the self-control (Standardized beta 0.4, p=0.02) along with SDLR (Standardized beta 0.36, p value=0.043).

<table>
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<th>SDL</th>
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<td>0.737</td>
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<td>0.987</td>
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<td>0.828</td>
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<td>0.000</td>
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<td>R Square</td>
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<td>0.198</td>
<td>0.178</td>
<td>0.125</td>
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</table>

Self-direction has been described as an outcome of cumulative effects on learning resulting from progressive development of student responsibility for learning (Miflin, Campbell, & Price, 2000). This study set out to examine whether there were any differences in SDLR amongst students who entered the medicine programme from the local Bahraini secondary schools and those students who exited secondary schools with ‘A’ levels or equivalent awards. We found that there were indeed statistically significant differences between these students especially in the desire for learning and self-control subcategories. Our results plainly indicate that students who have exited from a local school with a secondary school certificate were not prepared in any of the subdomains of self-learning readiness: self-management, desire for learning and self-control, with the last two subcategories being statistically significant. These domains were described in full in William’s study conducted in 2012 (Williams et al., 2012).

But in brief, the self-control subcategory determines the student’s ability to self-evaluate. The self-management subcategory determines the student’s ability to implement their own learning goals and manage the resources available to them.

There were no significant differences between SDLR scores when comparing age of the students this result correlates with the other studies done, one in Saudi Arabia with nursing students (El-Gilany & Abusaad, 2013) and a second done in Taiwan (Chen, Wang & Lin, 2006). We did however find a significant difference when comparing scores between males and females, with the former having higher scores in the desire for learning subcategory. This category focussed on the student’s motivation for learning and their ability to reflect on their motivation. Gender has been found to play an important role in the same subcategory in a self-directed learning study conducted on paramedic undergraduate students (Williams et al., 2012). However, the biggest
difference and the single predictive factor in our study was found to be secondary
school exit award, those students who left with a local Bahraini secondary school
certificate had lower scores for all three subcategories of self-directed learning
readiness.

Culture has been shown to play an important role in adult learning (Brookfield, 1980).
Our local students are nurtured in a collectivist culture where the emphasis is on social
harmony. This cultural influence does not encourage the development of traits such as
motivation and readiness to accept responsibility essential for the successful self-
directed learner (Garrison, 1992). A study done with Malaysian students, another good
example of a collectivist culture, identified that these students struggled with the
development of learner autonomy (Ahmad & Majid, 2010). Such a conflict often
arises in the minds of such students when adhering to their cultural values while
attempting to promote their learning by developing their individualism, which is
described much more explicitly by Knowles as ‘a process in which the individual
takes the initiative, with or without the help of others’ (Knowles, 1975). This lack of
learner autonomy is not new, studies have described the challenges in adopting such a
model for University students in other countries in the Middle East such as Oman.
These include teacher’s lack of understanding about learner autonomy, lack of
resources to adopt learner autonomy and community expectations of both the
educational institution and the teacher (Al-Saadi, 2011b). Other studies have shown
this obvious tension in moving from collectivist beliefs which are rooted in the norms,
obligations and duty to more autonomous individuals (Hwang, Francesco, & Kessler,
2003).

Learner autonomy is a central dimension of independent learning (Moore, 1972) and
programmes in which autonomy is fostered should be encouraged (Thanasoulas,
2000). Students from the local schools are struggling to develop this autonomy due to
the passive learning process adopted in most regional secondary schools. A similar
type of passive learning which exists in Middle Eastern schools was described in a
study conducted at a Nepalese medical school where rote learning and reproduction of
factual information dominated in their local schools (Shankar et al., 2011). The
importance of supporting autonomy in medical education is clearly laid out by
Williams and his colleague in an article published in the late 90s. In which they argue
that students who learn autonomously, freely choose to read and study because they
find material interesting or important to their identity as a physician (Williams & Deci,
1998). However, in Middle Eastern countries such as Oman, learner independence is
not held in high-regard in secondary education and spoon-feeding of information to
students is prevalent in local schools. Pupils have no say on what to study and how to
study, and skills such as metacognition and reflection are being largely excluded from
the curriculum (Al-Saadi, 2011a). For students to take charge of their own learning
poses a major challenge for the majority of students entering tertiary education in the
Arabian Gulf region (Al-Saadi, 2011b). This is reflected in our own findings where we
show a statistically significant difference in the SDLR self-control subgroup between
local school students scoring 63.1 out 100 and those taught based on the British school
system attaining ‘A’ levels who scored 71.2 out of 100, p value 0.04.

While the pool of university students eager to enter the tertiary education system is
ever increasing, many of these students do not meet admission entry criteria or are
underprepared for independent learning. This disconnect between the secondary and
tertiary education in the Middle East has been reported elsewhere (Rupp, 2009) and
has led us and other Western-style higher education institutions to develop a number
of pedagogical approaches to build and improve learner autonomy amongst our local entrants (Mills, 2008). Such supportive programmes help students prepare for the rigour of a Western curriculum by introducing a year-long remedial programme. In order to correct this disconnect at our own institution, our medical school has developed a premedicine programme termed Foundation Year which allows students to improve and build their knowledge of English and Science in order to help them make a smoother transition into the five year medicine programme. This programme introduces a number of pedagogical methods which allows students, especially local students to build their learner independence. Our results show that the Foundation Year students who participated in this study did not appear to have developed sufficient learner autonomy. This gives us the impetus to adjust the Foundation Year curriculum in such a manner as to try and incorporate more explicit methods to help students develop their learner independence.

Grow suggests that teachers can actively equip students to become more self-directed in their learning and even suggesting a model to assist teachers (Grow, 1991). Projects at our institution where learner independence has been explicit have been much more successful and were based around a series of practicals to learn human anatomy. We have developed in-house programmes where the emphasis has been on learning information in a self-directed manner. These projects have been quite successful and are based around a series of practicals designed to teach human anatomy. For each practical class the activities were divided into three sets of tasks which were described in detail in a dedicated guide available as part of our online teaching resources. The first set of tasks was to be completed before coming to class. For this part of the exercise, students in their own time attended a dedicated study room which was equipped with a series of anatomical teaching models (Somso®, Germany) which provided them with the necessary background information appropriate to the scheduled practical (Moravec, Williams, Aguilar-Roca, & O'Dowd, 2010). They were free to undertake this work on their own, or collaboratively in small groups. The material had to be covered in advance of the scheduled practical which constituted the second set of tasks. These involved a further series of anatomical teaching models (Somso®, Germany) which were studied during the class and these tasks involved the active participation of teachers who acted as facilitators during the session. The third and final set of tasks was to be completed after the scheduled practical sessions. They required the students either to work on their own or form small discussion groups (Jones, 2007) (Chiriac, 2014) in their own time and work through a number of exercises which included the analysis of carefully-selected case histories and specific questions designed to maximise the benefit they obtained from this activity. The whole process allowed the students take charge and develop their own learning in a self-directed manner. The benefit was evident from the improvement in their self-directed learning readiness scores.

The limitations of the study were that the data were collected on a self-reporting basis which could be subject to recall bias. Additionally, the small unequal sample size among the two groups could have contributed to some of the observed differences. A further limitation was that the results were from a cross-sectional study and not a longitudinal one. This was something we were aware of and we conducted a follow-up with the same questionnaire at the end of the first semester, thirteen weeks after we had introduced the self-directed learning classes in human anatomy. These results showed no significant differences between local school students and those exiting with
‘A’ levels or equivalents in any of the three subcategories or in the total self-directed learning score.

Integrating unprepared secondary school students into modern Western medical curricula remains an interesting challenge for those of us engaged in in higher education teaching. Whilst students struggle to adopt individualistic traits in order to cope with learner independence, teachers working in international higher education institutions should devise strategies to expedite the introduction of approaches that will help local students cope with a more Western curricula. The pressure on students is great and to ease their transition from secondary to tertiary education we as teachers should squarely place an emphasis on self-directed learning as a learning strategy for formal undergraduate studies and beyond into for life-long learning.

**Conclusions**

Self-directed learning is a key skill in the modern medical curriculum. Students who exit with a local secondary school certificate seem unprepared for this type of new learning strategy. This creates an educational challenge for institutions bringing a more modern curriculum with a focus on learner autonomy to the Middle East. Consideration must therefore be given to the development of more appropriate methods to assist such students in adopting this approach to learning in tertiary education.

Some recommendations include:

1. To realign the secondary school curriculum in order to adjust for the mismatch between secondary and tertiary education
2. Make an adaptation to introduce skills in the preparatory year of the tertiary degree level to improve the transition
3. An opportunity is created for private sector to produce short courses to help bridge the gap for autonomous students

Any future research should focus on the two key areas to enhance the transition for students from secondary to tertiary education.

1. Identifying implementation challenges
2. Designing innovative methods to introduce more autonomous learner opportunities

**References**


