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Exploring the effect of backwash in first year medical students and comparison with their academic performances

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Abstract

Assessment is an important aspect of learning and teaching which enables students to progress to either higher grades of studies or seek for employment, it also helps the teachers to assess the effectiveness of their teaching methodology. Several academicians have emphasized that assessment has strong impact on all aspects of learning. According to Buck, Backwash is influence of examination on learning.

We explored presence of backwash effect by questionnaire, rated on 6 point Likert scale with 10 items, in first year medical students and compared with their academic performances.

The first year medical students were surveyed by newly developed and validated backwash questionnaire (BAQ) in this study. The questionnaire was based on qualitative studies on backwash effect. All students were categorised into three groups based on their previous exam scores. High achievers were defined as having cGPA of > 3.5, medium achievers with cGPA ranges between 3.5 to 3.0 and low low achievers of cGPA < 3.0. All three groups were evaluated for the presence of backwash.

The first year MBBS students (n=81) from a designated private medical university in Malaysia participated in this study. The male: female ratio was 1:1. High achievers were 39.5% (32/81), medium achievers 48.1% (39/81) and low achievers were 12.3% (10/81). Backwash was present in 46% (38/81), highest in medium achievers 50% (19/38), followed by high achievers 39% (15/38), low achievers 10.5% (4/38).

These results suggest that medium achievers are more prone to adopt learning strategies with the aim to pass assessments only. However, it is also interesting observation that high achievers also tend to have backwash. As far as low achievers are concerned, they have less backwash effect as observed in this study. The presence of negative effect of Backwash in high & medium achievers, suggests that assessment exert great impact on learning of medical students. To take the maximum benefits out of assessment, there is need to improve learning by adopting new strategies and improvements in teaching learning activities.

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1. Background

Assessment is commonly referred as a measuring yard of learning and teaching activities. Assessment or academic performance enables students either to achieve higher grades of studies or seek employment. The teachers often assess the effectiveness of their teaching methodology by the pass grades of students. According to Alderson and Wall (1993) assessment is indeed a powerful determiner of what had transpired within a classroom. The term “backwash” denotes either negative or positive effects of assessment on learning and teaching activities (Buck, G. 1988). There is dearth of studies on backwash among medical and health care students, as backwash was used largely in language studies. Dina, T. (2011) had reported that high-stakes examinations (even though they are powerful) might not be the only key factor influencing profound changes in an education context. The study also found that factors such as faculty members, study materials, parents and educational environment equally had important roles to play in promoting backwash. Several studies reiterate the complexity of investigating backwash effects that can be found both inside and outside the classroom context and that assessment has strong impact on all aspects of learning (Alderson C, 1993, Andrews S, 2004). Other researches defines (i) backwash as the effects of testing on learning and teaching (Hughes, 1989), (ii) an unexpected side-effects of assessment and not to the planned effects when the primary focus of the examination is to regulate the curricula (Spolsky B, 1994) and (iii) Backwash alludes to the way that testing controls not just the educational program of a course, this impact is seen working in a retrograde bearing, subsequently the expression, “washback” is also used as synonym for backwash (Biggs, 1995). Djuric, M (2008) found that washback is presented as a change agent that used as bridge for efficient communication between educator and assessor. Backwash acts differently in different educational contexts as it can infer positively and negatively on the stakeholders (Shohamy E, 1996, Ching Y, 2009). The summarised positive backwash effects are it (i) induces teachers to complete the syllabus within the stipulated time, (ii) motivates learners to work harder to accomplish goals and thus augment learning (iii) helps in the complete utilisation of designed learning-teaching activities within designated span of time. The negative backwash are (i) encourages teachers to focus only on completing the curriculum and preparing students for examination, (ii) instils anxiety among teachers and students and pose a hindrance to their performance, (iii) instead learning for knowledge that can be applied in situations, students often learn discrete points for the purpose of examination, (iv) cramming often leading learners to have an undesirable backwash toward examination and changing their motivation for learning accordingly (Ching Y, 2009).

As there were not many or no research done on backwash effects among medical and health sciences student, this study aimed to explore the presence of backwash effect in medical students and compared the results with their previous academic performances. The research would like to determine the magnitude of backwash effects (both positive and negative) and study the relationship between backwash and academic performances.

2. Methodology

A cross sectional pilot study was conducted among the first year medical students at renowned private medical University in Malaysia. Both semester 1 and semester 2 students were invited to participate in this study. Both cohort from semester 1 and 2 consisted approximately 427 students. There were 81 out of 427 students who had voluntarily participated in this study.

The study adopted quantitative data collection method. A structured questionnaire named as **Backwash Assessment Questionnaire** (BAQ) was developed based on extensive literature reviews. This was used as an assessment tool to measure the presence and absence of backwash effects. An initial 15-item based questionnaire was designed, rated on 6-point Likert scale which was then reduced to 10 items based on pilot study results. This questionnaire had gone expert validation under a group of senior faculty members from medical education and community medicine disciplines. The data collected through the BAQ was compared with students’ previous academic performances. All students were categorised into three groups based on their previous examination scores. High achievers were defined as having cGPA of > 3.5 , medium achievers with cGPA ranges between 3.5 to 3.0 and low achievers of cGPA < 3.0 . All three groups were evaluated for presence of backwash.

The data collected were analysed by using the statistical package for social sciences (SPSS) version 17.0 for windows. The categorical variables were expressed in terms of proportions in descriptive analysis. Chi-square test and odds ratio were used for comparison purposes. In this study, a p-value < 0.05 was considered as statistically significant.

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