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Total Student Workload: Implications of the European Credit Transfer and Accumulation System for an Integrated, Problem-Based Medical Curriculum

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Abstract

Purpose: How much time students spent on unstructured self-study activities in problem-based learning is not clear. The study addressed this issue by (1) identifying the nature of students' unstructured learning activities in a problem-based medical curriculum, (2) measuring the unstructured student workload per week and per semester, and (3) assigning European Credit Transfer and Accumulation System units to the medical problem-based modules based on calculating the total student workload. *Method:* Nineteen undergraduate medical students in the pre-clerkship phase were enrolled in the study. Data about the nature of unstructured learning activities and the amount of time spent on them were collected through focus group interviews (n=19); and a log diary method (n=13) describing their unstructured educational activities over one week. A response evaluation model and a thematic description approach were employed for data collection and data analysis respectively.

Results: A broad variations of unstructured learning activities were identified. The unstructured student workload ranged from 33 to 41 h/wk., while the total student workload was 63/58 h/wk. for years 2 and 3 respectively. The total student workload in a 15-week semester was 945 h in year 2 and 870 h in year 3, which equates with about 34 and 31 European Credit Transfer and Accumulation System per semester for years 2 and 3, respectively.

Discussion: Measuring student total workload in a problem-based program is important for evading the associated overload, and improving the quality of teaching and learning. Calculating student workload in an integrated problem-based curriculum is a challenge. Total student workload is the foundation for determination of the European Credit Transfer and Accumulation System units. Measuring unstructured student workload (or "out-of-class" learning time) is an important component of total student workload. Assigning the European Credit Transfer and Accumulation System to problem-based programs improves its quality assurance, and has educational, curricular, and organizational impact. Therefore, student workload in such programs should be regularity monitored and evaluated.

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Keywords: Credit system; European Credit Transfer and Accumulation System; PBL; Student workload

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1. Introduction

The American credit hour system has been used for more than 100 years for measuring the student workload (SWL), faculty workload, tuition, costs of the program, and funding. It was originally developed by the Carnegie Institute to develop a formula which calculates how much a school teacher teaches to justify giving him a pension.^{1,2} This formula states that one hour of teaching in a classroom per week, for a total of 15 weeks, is equal to one credit hour. It is still the gold standard metric in academic institutions all over the world.^{3,4}

All what the credit hour system describes is "time" spent by a teacher teaching in a "class room". This description has no relation with the quality of teaching, or with the students' learning activities. Regarding the latter, it suggests that for each five hours of teaching that the student receives, two hours of out-of-classroom work must be added. 5.6

Although the American credit hour system includes students' activity to some extent, it is not a measure of the actual effort exerted by learners.¹ With the introduction of curricula that emphasize the importance of student' self-directed learning, ⁷ this credit hour system begins to fall short. The advent of new educational approaches such as problem-based learning (PBL),^{8–10} and the growing advancements in educational technology, e.g. distance education and remote learning are additional challenges that make the credit hour system a barrier to innovation in teaching and learning.¹¹ In addition, changes in the curricula itself, e.g., the move from discipline-oriented curricula to integrated curricula, also make it difficult to apply the American credit hour system.

Alternative educational credit frameworks have been evolving as a replacement for the traditional model. McDaniel¹ suggested reframing the existing academic credit by making the "level of students' effort" rather than the "contact hours" as the foundation of the suggested credit system. Such change will free faculty and educational designers to be more innovative. Watkins and Schlosser^{12,13} suggested using the Capabilities-Based Educational Equivalency units, which focus on the attained knowledge and skills of learners as a standardized measure of educational achievement based on taxonomies rather than on time in the classroom.

Among these innovative credit hour systems is the European Credit Transfer and Accumulation System (ECTS) ,¹⁴ which is a numerical descriptive value of qualification expressed in terms of SWL. It is defined as "the number of working hours typically required to

complete the learning activities of course units in order to achieve their expected learning outcomes".¹⁴ In this system, the total SWL comprises two components; first, the structured SWL which is the scheduled teacher-contact hours interventions; and, the unstructured SWL (USWL) which is the time spent by students in their own self-study, completing course assignments, and preparing for all types of exams, e.g. assessment workload .^{14,15} It has been considered as an essential description of the educational qualification recommended in the European Higher Education Area as a key element of the Bologna and Europeans Framework Qualifications^{16,17} in terms of total SWL.¹⁸ It proposes that one ECTS credit corresponds to 25-30 h of total student working, and each 30-week academic year should meet 60 ECTS.¹⁹ As an agreed requirement, 1500-1800 h of total SWL are necessary in a full academic year, or about 50-60 h. of total SWL/per week.14

Although previous literatures stressed the importance of measuring the actual SWL in every course and university degree, it, however, has not been given high enough priority among issues discussed in higher education .⁵ In practice, much of the calculation of the SWL of a course has been done by guesswork rather than by any more rational or scientific way. In integrated curricula, with PBL as one of the main strategies of learning, measuring SWL or faculty workload is problematic. The structured component of the SWL is easy to calculate from the activities organized and offered by the program during every week. What is not known and difficult to measure is the unstructured, independent student learning component, inside the college, at home or even at 'Starbucks'.

The aim of this study was to; 1) identify the nature of student unstructured learning activities, (2) measure the USWL per week and per semester, and (3) apply the data obtained from measurement of the USWL to collaborate the total SWL in terms of ECTS units.

2. Methods

2.1. Participants

This study was conducted at the College of Medicine, University of Sharjah, UAE. The medical program adopts a competency-based and integrated curriculum, and is of six years duration. It is organized around three phases; phase I is the foundation year, phase II is the three-year pre-clerkship phase, and phase III is the two-year clerkship phase. PBL is one of the main learning strategies used in the pre-clerkship phase. The study focused on the second

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