

## How Honours/Pass/Fail Grading is Failing Students

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*"Nothing is more fatal to a true intellectual training than a constant preoccupation with its practical results.... We make the examination the end of education, not an accessory in its acquisition"*

– Sir William Osler<sup>1</sup>

When one speaks of amending the way students are graded at the University of Toronto Medical School, it often brings about groans, reflective of the numerous times it has been discussed and the apparent lack of student interest in this all too important issue. Indeed, during the faculty-initiated review of grading three years ago, nowhere was apathy more evident than in the attendance at the town halls he led, attracting only 7%, or little more than 30 students.<sup>2</sup> Even in the subsequent vote used to gauge student's opinion, fewer than 50% of students took the time to vote. Since that time, however, the landscape has changed dramatically spurring a student-led re-evaluation of the method of grading, capped off by a town hall attended by over 225 students –so full that some were forced to sit in the aisles. During this review, the votes used to gauge student's opinion attracted 85% and 67% of the first and second year classes, respectively, with support for Pass/Fail totaling 74% and 77%, respectively, for preclerkship and 76% and 84%, respectively, for clerkship. An electronic survey was used to gauge the opinions of the third and fourth year classes presently in clerkship and, with 150 responses, similar percentages favouring Pass/Fail of 83% for clerkship and 72% for preclerkship were observed. Thus, it is safe to say that this is a subject of prime concern for students. While, as with any issue, there are those who believe to the contrary, these results suggest that a majority of students support a change to a Credit/No Credit system of transcribing grades as opposed to the current Honours/Pass/Fail system. Though there was support for a change to both preclerkship and clerkship from students, there exists significant opposition to change among some clerkship course directors which was largely absent amongst preclerkship course directors guiding the decision to limit this proposal to only preclerkship. In fact, a proposal for change was cleared through the preclerkship committee with no opposition and strong support from some of the directors. Based largely on a desire for a more open learning environment, with reduced competition and increased collegiality and with the support of a majority of undergraduate medical students, it is recommended that the method of transcribing preclerkship grades in the Faculty of Medicine of the University of Toronto be changed from Honours/Pass/Fail to Credit/No Credit in line with the University's Grading Practices Policy.

When the University of Toronto Medical School made the move to Honours/Pass/Fail from letter grades in 1998, a desire to alleviate student stress and encourage more balanced students was a driving motivator in the change.

Unfortunately, as acknowledged in the Honours/Pass/Fail Grading Policy Task Force report prepared by Dr. Richard Pittini, "the goal of reducing mark anxiety was not met." While it is impossible to conclusively state the cause of this failure, one could possibly infer that it is the existence of an honours designation. Students are brought into the medical program with a near obsession over each and every mark, partly a byproduct of the GPA system of reporting grades and partly a result of the competitiveness inherent in medical students. Having students compete for an honours grade that is of questionable importance in a future CARMS match can only serve to aggravate this inherent competitiveness. Rather than being an issue concerning a small percentage of the class, the fact that preclerkship courses are given with an approximate 80% average and 6% standard deviation means that over half the class lies within 5% of the honours cutoff.<sup>3</sup> In fact, assuming a normal distribution of marks, around 38% of students would fall within the range of 77-83%, either just above or below the cusp of honours, contributing to considerable feelings of stress and anxiety. The preclerkship years are a time of great transition in students' lives, making the shift from students to doctors, and this stress can only have a negative effect, exacerbating the difficulty of this transition. It is perhaps for this reason that it was found that the incidence of major depression or probable major depression amongst medical students was 12%, more than double that of the general population.<sup>4</sup> To address any ambiguity as to the cause of this stress, a literature review was performed by Wolf with the conclusion drawn being, not surprisingly, that examinations were the major cause of stress in the basic science years.<sup>5</sup> While it will always remain impossible and even undesirable to fully eliminate the stress of medical school, a move to a Credit/No Credit system of transcribing grades would help to reduce this stress and foster an environment of learning and collegiality rather than stress and competition.

The issue of stress, however, goes deeper as one cannot ignore the impact of this stress on student balance. It is certainly the desire of the University to produce well-rounded students, with experiences that go beyond simply what is learned in the classroom. In this respect, the stress associated with mark anxiety stifles this out of the classroom learning, which is beneficial both for personal development and future CARMS matching. While some would suggest that this link is tenuous at best, it is clear that students, as with any individual, will respond to the incentives provided to them. The existence of honours certainly incentivizes in-classroom learning; however, this often comes at the expense of other valuable activities. One need only look at the quality of preparedness or attendance of other classes or activities not related to a pending exam to see how students' focus shifts entirely to the upcoming exam and away from overall learning. In this respect it has been said that, "tests

reduce learning to a series of hurdles and restrict learning.”<sup>6</sup> On some tests, focus is placed on minor minutiae not necessarily of clinical relevance thus favoring rote memorization of past exams and extensive incidence of academic bulimia (a focus on short term fact regurgitation) at the expense of genuine learning. For many, courses given in a field in which they have a strong background could be less valuable to them than participating in optional clinical activities be they an observership, a research elective or volunteering in the community. This focus on minor minutia accentuated by the existence of honours, however, makes students unwilling to exercise the risk-taking behaviour that would allow them to individualize their preclerkship education in terms of their needs, based on their background and their interests.<sup>7</sup> It should be the goal of this medical school to produce well-rounded physicians with strengths in all the CanMeds competencies rather than just a focus on the medical expert category.

Delving deeper into the issue of grading, however, one must ask not just the question as to what the effect of honours is on students but also what honours is actually rewarding. It is often said that having honours falls in line with the University’s goal of promoting excellence and that this distinction is necessary to reward those who work harder and strive for this excellence.<sup>8</sup> Contrary to this assertion, however, one needn’t look hard to see the importance of a student’s background on their preclerkship achievement. This observation has previously been made by Dr. Ian Taylor, a first year course director, in the town hall of the initial Honours/Pass/Fail Grading Policy Taskforce with his statement that, “students from life science backgrounds do better.”<sup>9</sup> One is left therefore to conclude that either those from a life science background have a higher aptitude for learning than their peers - an unlikely proposition - or the more probable explanation that marks in preclerkship are primarily reflective of our background in the material achieved in a student’s pre-medical school education. To further this hypothesis, a survey was performed of the class of 2011 at the University of Toronto Medical School asking their grades in Anatomy, Physiology and Biochemistry as well as their background in the subject, their interest in it, class room attendance and the amount of work they put in outside of the class room, among other variables. While the multivariate regression analysis has not yet been performed on the results, the preliminary findings using only ANOVA analysis of the biochemistry and physiology grades, the two most likely in which students would have a background, found, not surprisingly, a statistically significant difference of 4.1% ( $p < 0.001$ ) between those who had a background in the material examined and those who did not. While further analysis of the surveys will shed more light on this issue, this finding of a 4.1% difference is still extremely relevant given that around 40% of the class lies plus or minus only 3% of the honours cutoff. That this link exists in unsurprising; however, rewarding a student’s background, in terms of what is recorded on students’ transcripts, lies completely contrary to the admission principles of the University of Toronto Medical School. As is codified on the admissions website, the only requirements for entering students are two full-course equivalents in the life sciences and

one full-course equivalent in the humanities, social sciences or languages.<sup>9</sup> Further, on the same website this contradiction is further observed:

“There is no single background that is ideal preparation for the practice of medicine. Students with university education in any discipline are encouraged to apply. Students should follow a program of study that will offer an alternative to medicine should they not be accepted.”<sup>10</sup>

A move to a credit/no credit system of transcribing grades would remove this apparent contradiction between the school’s admissions process and the preclerkship method of evaluation.

Along the same line as questioning what it is that honours actually rewards, one must also wonder as to the relevance of preclerkship grades in predicting future clinical performance. On this all too important subject, the literature remains quite divided and somewhat outdated. In a literature review of 27 relevant, though quite old, articles on this subject, Wingard found a low correlation between academic evaluation and career performance, a reflection he postulates is due to the “inherent inability of grades to indicate the transformation of potential and aptitude into accomplishment.”<sup>11</sup> In a study attempting to correlate physician’s clinical performance with their academic record as undergraduate medical students at the University of Utah, 77 different measures of on the job performance were assessed. The authors found that the physicians’ medical school grades were not significantly related to their performance scores.<sup>12</sup> Similarly, in a study at the University of Bristol’s School of Medicine, it was found that the traditional measures of undergraduate academic performance could not predict post-graduate clinical performance as rated by consultant assessments and that, in fact, the OSCE was a more accurate predictor.<sup>13</sup> In contrast, a Wright State University School of Medicine study did show this link to be statistically significant, establishing, in their opinion, the predicative validity of undergraduate assessments.<sup>14</sup> In the most oft-cited study of undergraduate medical assessment’s relationship to clinical performance, the students of Jefferson Medical College were initially grouped into deciles based on their first year performance. When these groups were then assessed for their knowledge and data gathering skills in their first year of residency, the top decile performed statistically better than all other groups while the bottom decile performed significantly worse.<sup>15</sup> A statistical difference was also observed between 6th and 7th decile (60-70th percentile), while no statistical difference was observed between any other deciles.<sup>15</sup> Apart from the one significant decile difference observed in the Jefferson study, it would seem to indicate that there is no statistical difference in future ability for those who do not fall into the top or bottom categories. Further, the study’s finding of differences may not even apply at the University of Toronto as their admissions policy necessitates students having a strong background in the basic sciences as explained on their application website:

“A strong preparation in the sciences basic to medical school studies is advised. A variety of college course formats and combinations, including biology, general and organic chemistry and physics are a minimum. Courses taken to

meet the basic requirements should be, in general, comparable to courses accepted for concentration in these disciplines. Courses taken should be supplemented by laboratory experiences”

This stands in contrast to the admissions policy of the University of Toronto which, as previously stated, explicitly expresses that this background is not required. One could therefore surmise that the results of the Jefferson study may not completely correlate with what is observed at this school due to greater variation in students’ past exposure to the relevant basic sciences allowing for greater academic achievement but not necessarily superior future clinical performance.

Underlying the entire debate about the method of grading here at the University of Toronto is the change occurring across Ontario and indeed even Canada with respect to the method of reporting grades. While it is tempting to ignore such considerations and even disparage them as mere appeals to popularity, one cannot overlook the fact that many of our students will then pursue post-graduate education at other universities while those who desire to remain here at the University of Toronto will be competing with students from other medical schools. Thus, such an isolationist argument is, at its core, fallacious. At the time of the last faculty led grading review, the grading landscape across the nation was substantially different. Then, as reported in the taskforce report, not a single school across Ontario operated under a Credit/No Credit or similar system for preclerkship.<sup>2</sup> Now, McMaster, Northern and Western all operate under a Pass/Fail or Credit/No Credit system with a change to Queen’s to come before the next academic year (the motion to change to Pass/Fail for all four years has cleared their Undergraduate Medical Education Committee; however, must still clear the School of Medicine Council and University’s Senate).<sup>17</sup> These changes will leave the Universities of Toronto and Ottawa Medical Schools as the only schools with an Honours/Pass/Fail system for preclerkship. While medical schools across the United States have a patchwork of different ways of transcribing preclerkship grades, a Pass/Fail system is in place at many of the top schools of the country such as Harvard, Stanford, UCSF and Yale.<sup>18</sup> Although there exists no formal study of incoming students’ preferred method of grading, one could postulate that the competitive environment fostered by the existence of Honours could act to dissuade some top students from coming to the University of Toronto. In a survey of those students who rejected an offer from the University of Virginia’s Medical School in 2000, a lack of Pass/Fail grading was cited as a contributing or determining factor for 13% of students who rejected the offer.<sup>7</sup> As recruiting the best and brightest will always remain the recruitment goal of the University, our method of grading should not act as a hindrance to attracting this class of individuals.

The most important effect of changes to grading across the province and nation could be its effect on the students of the University of Toronto Medical School at the time of applying to a residency program. At the core of this debate rests two rhetorical questions: Is an Honours from the University of Toronto viewed better than a Pass at another

school with a Pass/Fail method of grading and is a Pass from University of Toronto seen as weaker than that school’s Pass? As students from other schools do not have the opportunity to achieve an Honours it would be hard to believe that University of Toronto students are given an advantage and being that students here did have the opportunity to achieve an honours and failed to achieve it, it is quite easy to see how a University of Toronto Pass could be viewed inferiorly. Given the fact that a majority of students will not achieve honours in all of their courses, one must therefore postulate that the existence of honours, by cheapening the value of a University of Toronto Pass, could allow most student’s transcripts to appear blemished in a way not experienced by students at other universities. There are those who postulate that removal of honours would put students at a disadvantage in applying to post-graduate programs; however, in a survey of 794 post graduate program directors in the United States, it was found that grades in preclinical courses were the least important variable out of 12 variables considered.<sup>19</sup> Further, a study of Stanford’s graduates’ ability to match with highly sought after residency positions (Stanford being a school that has been pass/fail for quite some time) showed that students at this pass/fail school were able to match with the most competitive residency placements and that their clinical proficiency was at the level or exceeded that of their peers in almost all cases considered.<sup>20</sup> Because of the relative unimportance of preclerkship grades in post-graduate placement, a switch to Credit/No Credit will not harm students’ placement prospects, and, indeed, these could even be improved by removing the disincentives to the out of class activities which are so crucial to a successful CARMS match.

Perhaps the most frequently heard argument against a move to Credit/No Credit is a fear of its effect on student motivation. That is to say that there are those who believe that in the absence of Honours, students will be less motivated to study and, consequently, will learn less in their preclerkship career causing them to be under-prepared for clerkship. Leaving to the ongoing curriculum review the fact that some of what is learned in preclerkship now is of questionable clinical significance, such a statement grossly underestimates the desire of the students selected for this university to prepare themselves to be practicing physicians. Far from detracting students from learning, a switch to credit/no credit could serve to promote genuine learning of subjects rather than the rote memorization and reliance on short term memory currently in practice by many students. When the University of Michigan’s Medical School made their switch from Honours/High Pass/Pass/Fail to Pass/Fail, a comparison was made between the grades of the last year of the old system and the first of the new and no significant difference in GPA’s was observed.<sup>21</sup> Further, the hypothesis that, under the new system, students assured of a Pass would be less motivated to study and would thus perform worse on an exam was refuted as there was no statistically significant difference between both years in the correlation between the mark a student had going into the exam and their subsequent performance on that exam.<sup>26</sup> The study also included surveys of student’s subjective measures of satisfaction of their overall learning experience and

found students to be significantly more satisfied with their learning experience under Pass/Fail than under the previous system.<sup>26</sup> In a similar study, though prospective in design, where Dental students were arbitrarily assigned to be graded as pass/fail or A-F, there was no significant difference observed in their performance on 3 separate exams. Perhaps the reason that no affect on motivation was observed in either of these studies, and a crucial consideration of this debate over grading, is that marks are still given to students with the only difference being how they are transcribed. In this respect, marks still serve the traditional role of providing feedback to students about their performance. Students in the University of Toronto's Medical School do not require something to be placed on their transcript to strive for excellence but are motivated by an internal desire to excel reflective of the medical school selection process.

It is for the reasons outlined in the preceding pages that the students of the University of Toronto Medical School overwhelmingly supported a shift to a Credit/No Credit mechanism of recording grades. Such a change would have the beneficial effect of reducing stress and competition while at the same time encouraging the outside of the classroom learning necessary to create well-rounded physicians. As a positive corollary, the reform would assist in standardizing grading across the province and nation, removing a potential disadvantage during the CARMS application process for the majority of students who will not achieve honours in all courses, particularly for those without backgrounds in the relevant material. It was with the support of a majority of students that the move from letter grades to the current system was made and, likewise, it is with this same support that a shift to a Credit/No Credit system of transcribing grades is being sought.

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#### If you are interested in these or other opportunities, please contact:

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