

guessing answers to multiple-choice or true/false questions, though a student explained it is unlikely that most UW students guess answers on exams, thus the practice has consequences for all students in a course and is based on what is likely to be a faulty assumption.

After some discussion, several members expressed a need for more data relating to how prevalent the practice is at the university. For example, a member questioned if use of the scoring method is isolated to certain disciplines, or if it used by specific instructors.

A member noted one of the sources/footnotes referenced at the end of the student resolution is of questionable credibility. He explained that source would be very bad to use as a basis for university policy. He noted he developed a written response to the resolution for members to read (Exhibit 3).

A member disagreed with the logic behind granting points for right answers while taking away points for wrong answers as a test scoring method. He agreed the scope of the problem needs to be evaluated.

Halverson explained he would send a response to the student senate on behalf of the council. He summarized that the FCTL does not have knowledge of the scale or scope of the problem and so cannot endorse the resolution. He explained the council should try to work with members of the ASUW to gain traction on the issue.

7) Discussion of College of Arts and Sciences “Direct-to” admissions proposal – Kevin Mihata

Kevin Mihata (Associate Dean for Educational Programs, College of Arts & Sciences) was present to give a brief overview of changes planned for the College of Arts and Sciences (CAS) surrounding directly enrolling new students into one of the four CAS divisions (Arts, Humanities, Natural Sciences, Social Sciences). He noted the detailed proposal is being developed within a “1503” (academic program change/creation) form, which will need to be reviewed and approved by the Faculty Council on Academic Standards (FCAS) before being implemented.

Mihata explained that under the proposal, all new students (either freshman or transfers) in the College of Arts and Sciences will be directly admitted to one of the four CAS Divisions, and spend their freshman year with some degree of divisional guidance and enter that Division by the end of their first year. Students admitted to a Division will be given first priority for a major in that Division. Mihata explained this is the gist of the proposal, and CAS is not planning to implement any other restrictions on application to and/or entering majors which do not exist already. Where there is additional capacity beyond those applicants admitted to a Division/major, other students may apply.

Mihata explained there are two motives behind development of the proposal. The first is the capacity-constrained nature of many of the programs in certain CAS Divisions (e.g. most of the majors in the Natural Sciences are at capacity). He noted the number of students in those majors will largely remain the same as it is currently. The other reasons surrounds the fact that many students admitted to the UW do not end up being able to study what they intended to study. Students in this situation are aided by advisors, but that is not the experience the student necessarily wanted or imagined when they applied to be admitted to the university. The proposed admission model will provide greater certainty to applicants concerning what they will be able to study when admitted to the UW.

Questions and discussion

It was noted one critique of the admissions model is that students do not know what their desired discipline is at such an early stage. Mihata explained CAS is altering its first-year experience in order to allow the Division to explain itself to those interested students, and to get students into majors earlier to bolster deeper intellectual engagement via a community of peers and faculty. It was noted currently, many students enter these programs at end of their academic career, and CAS has the capacity to offer a UW education to many more students than are currently enrolled.

Mihata emphasized that the UW College of Engineering College operates under the direct-to-major admissions model already, which was especially necessary given the high demand for its programs. He explained because the demand is not equally distributed across the majors in CAS, the proposal was tailored to be “direct-to-division.”

Mihata clarified that student movement between units is not being restricted in any way besides the already standing capacity-constrained restriction on the number of students who can be enrolled into certain programs. Students are still allowed to study/apply to other units outside of CAS under the proposed model; there are no new restrictions.

After a question it was clarified that a larger institutional goal related to managing undergraduate student enrollment is part of the initiative. Years ago, it was the case that students could freely study in areas they had an interest in. Now, there are thousands of students want to study in the same programs, and it can be consistently understood/anticipated that many will not be admitted to their first-choice major simply based on numbers. It was noted peer-institution data is limited relating to enrollment management, though many universities are grappling with similar issues.

Mihata was thanked for briefing the council on the proposal, and he left the meeting.

8) Good of the order

Nothing was stated.

9) Adjourn

The meeting was adjourned at 11:55 a.m.

Minutes by Joey Burgess, jmbg@uw.edu, council support analyst

Present: **Faculty:** Thomas Halverson (chair), David Goldstein, Mark Zachry, Gillis-Bridges, Fred Bookstein
Ex-officio reps: Meixi Ng, Judith Howard, Maria Zontine, Navid Azodi
President’s designee: LeAnne Jones Wiles
Guests: Tom Lewis, Jason Johnson, Kevin Mihata

Absent: **Faculty:** Timea Tihanyi, Amy Howells, David Masuda, Dan Turner, Ellen McGough, Kathleen Peterson, Laurianne Mullinax

Ex-officio reps: Amanda Hornby

Exhibits

Exhibit 1 – opentextbook_support_libraries_fctl_040518.pdf

Exhibit 2 – asuw_resolution_negativegrading_040518.pdf

Exhibit 3 – to.fctl.4.4.2018.scoring.pdf

Subject: Faculty: apply for up to \$5,000 to develop an Open Textbook for your UW course

Happy start-of-Spring quarter! Below is a message about an exciting upcoming opportunity for open textbook funding through UW Libraries.

UW Faculty are invited to propose an Open Textbook project in which class materials can be tailored, remixed, made more interactive, and will create alternatives to commercial textbooks by encouraging new pedagogical models for classroom instruction, challenging the current textbook publishing environment, and making textbooks available at no cost to students.

Projects chosen to adapt an Open Textbook by combining or remixing new or existing openly licensed content to bridge gaps in available open textbooks will be funded from \$750-\$2000.

Projects chosen to create a new Open Textbook will be funded from \$1000 - \$5000.

Recipients must sign an agreement to certify the final work will be published under an Open license. See additional requirements and deadlines.

More about Open Educational Resources (OER)

Applicants must submit a statement of support from their department and complete the online Grant Proposal Application by April 15, 2018.

Projects will be judged using the following criteria:

- Estimated savings to UW students and number of students impacted
- Openness of proposed content, with CC-BY license as the preferred license
- Potential for proposed content to be adopted by other courses or sections
- Inclusion of a clear plan to assess student learning outcomes
- Innovation in teaching and learning (e.g. including students in textbook creation process, integrating textbook with active learning exercises, etc.)
- Inclusion of plan to use and update the text over the course of multiple quarters or academic years

- For adaptations of existing open textbooks, quantity of new material being created
- Feasibility of project being implemented by Autumn Quarter 2019

Awards were created to remove the obstacles to student success: in a survey by US PIRG of over 2,000 college students, 65% reported that they hadn't bought a textbook for a class due to the cost. According to the UW Financial Aid Office, Undergraduate students spend nearly \$825 on books and supplies every year, and the Bureau of Labor Statistics reports that retail prices for college textbooks have increased 88% from 2006-2016.

Awards are funded by the Kenneth S. and Faye G. Allen Library Endowment.

More information is available online or by contacting Chelle Batchelor, Director of Access Services, UW Libraries.



R-24-3:
A Resolution in Opposition of Negative Points
for Incorrect Answers in Examinations

WHEREAS, many classes at the University of Washington use examinations and other methods to evaluate the student's knowledge of the material; and

WHEREAS, these examinations may include questions in which the student selects one out of several possible answers; and

WHEREAS, these types of questions are commonly referred to as and include multiple-choice questions and true-or-false questions; and

WHEREAS, for some classes, selecting the incorrect answer for these types of questions will cause the student to incur negative points while omitting an answer will incur no points; and

WHEREAS, this policy, known as formula scoring, aims to prevent student from randomly guessing the answer and receiving points from an answer randomly guessed correctly [1]; and

WHEREAS, the SAT formerly used formula scoring for the multiple-choice section of the test, awarding 1 point for a correct answer, -1/4 points for an incorrect answer, and 0 points for an omitted answer [3]; and

WHEREAS, formula scoring fails to take into account the fact that students rarely if ever truly guess "at random," i.e. randomly choosing an answer based on a uniform distribution over the answers [1]; and

WHEREAS, formula scoring fails to take into account the vast middle ground of partial knowledge that exists between perfect knowledge and random guessing [1]; and

WHEREAS, formula scoring causes risk-adverse students to omit more answers than those students who are less risk-adverse [2]; and

WHEREAS, the decision on whether or not to answer a question depends also on irrelevant strategic considerations reflecting the student's attitude towards risk, which is unrelated to the student's knowledge [2]; and

WHEREAS, these factors cause students who are risk-adverse to be penalized disproportionately under formula scoring, systemically favoring some test-takers over others [2]; and

WHEREAS, formula scoring causes the student's score to underestimate the student's true level of knowledge for all students [2]; and

WHEREAS, formula scoring causes the variance of a student's score to increase [2]; and

WHEREAS, these outcomes make formula scoring an unreliable indicator of a student's level of knowledge for the professor [2]; and

WHEREAS, the purpose of examinations is to fairly and accurately gauge a student's level of knowledge in the material for the class; and

WHEREAS, as seen above, the practice of incurring negative points for an incorrect answer unfairly favors certain types of test-takers over others due to reasons not associated with level of knowledge; and

WHEREAS, as seen above, the practice of incurring negative points for an incorrect answer causes a student's score to be an inaccurate indicator of a student's level of knowledge; and

WHEREAS, the practice of incurring negative points for incorrect answers leads to examinations employing that practice to fail in its purpose to fairly and accurately gauge a student's level of knowledge in the material for the class; and

WHEREAS, not having negative points incurred when the answer is incorrect is more intuitive, strategy-free, and does not have the problems associated with formula scoring as seen above [2]; and

WHEREAS; the SAT, among other tests, has shifted away from formula scoring, removing the penalty for an incorrect answer [3]; and

WHEREAS; the primary mission of the University of Washington is the preservation, advancement, and dissemination of knowledge [4]; and

WHEREAS, examinations employing formula scoring, being unable to fairly and accurately gauge a student's level of knowledge, runs contrary to the University of Washington's mission; now, therefore

BE IT RESOLVED BY THE ASSOCIATED STUDENTS OF THE UNIVERSITY OF WASHINGTON:

THAT, the ASUW strongly opposes the practice of students incurring negative points for incorrect answers in examinations; for questions in which the student selects one out of several possible answers and true or false questions and

THAT, the ASUW strongly encourages the University of Washington faculty to use examinations that do not employ this practice of students incurring negative points for incorrect answers for questions in which the student selects one out of several possible answers and true or false questions, but rather only reward positive points for correct answers; and

THAT, this resolution be forwarded to ASUW Director of University Affairs Navid Azodi, Faculty Senate Chair Thaisa Way, Faculty Council on Teaching and Learning Chair Thomas Halverson, ASUW President Osman Salahuddin, and University of Washington President Ana Mari Cauce.

[1] Budescu, David, and Maya Bar-Hillel. "To Guess or Not to Guess: A Decision-Theoretic View of Formula Scoring." *Journal of Educational Measurement*, vol. 30, no. 4, 1993, pp. 277–291. JSTOR, JSTOR, www.jstor.org/stable/1435226.

[2] Budescu, David, and V. Bo. "Analyzing Test-Taking Behavior: Decision Theory Meets Psychometric Theory." *Psychometrika*, vol. 80, no. 4, 2015, pp. 1105–1122.

[3] "Key shifts of the SAT redesign" – Washington Post

<https://apps.washingtonpost.com/g/page/local/key-shifts-of-the-sat-redesign/858/>

[4] "Role and Mission of the University" – Board of Regents Governance Regent Policy No. 5

<http://www.washington.edu/admin/rules/policies/BRG/RP5.html>

April 4, 2018

Dear Tom, dear Joey, and fellow members of the FCTL,

I am writing to set down my talking points for tomorrow's discussion of ASUW resolution R-24-3, "in opposition of negative points for incorrect answers in examinations," which the ASUW forwarded to our chair and thus presumably to us members for some unspecified purpose. I'd appreciate it, Joey, if these brief notes could be forwarded to the committee's membership in advance of the April 5 meeting.

In my view ASUW resolution R-24-3 is incoherent equally as pedagogy, as academic sociology, and as statistics. I have tried to selectively sort my marginal comments from the document into these three categories. This is only a rough compilation, and while I have published extensively on the correct use of numbers in the sciences I have not applied my arguments to my own university setting, so feel free to treat the following as half-baked. (Especially you, Tom, for whom educational assessment is a major part of your discipline's official mission.)

1. Pedagogy. R-24-3 seems to be based on a sort of bathtub theory of "knowledge," by which a "test" has the purpose of "fairly and accurately gauging a student's level of knowledge" of some material. "Level of knowledge" is a VERY bad metaphor for what it is that we are in these classrooms to alter. At least, that is not why I am here. In my classroom teaching I do not attempt to alter a student's "level of knowledge," nor to evaluate it. I am teaching a skill set, not the contents of a bathtub. My grading, which is not numerical in spite of the fact that the course is called "Numbers and Reasons," assesses their ability to quote sources correctly and to weave them together into valid inferences. But I admit that what I am teaching is "college thinking," not any disciplinary curriculum.

In any case, that's not what a multiple-choice test is capable of assessing, even in the best examples, where the wrong answers need to be roughly equiprobable construals of the probe in response to a variety of plausible but false alternative cognitive schemes. If the false items do not represent plausible alternative construals, the test is badly designed for its ostensible purpose, whatever that might be. In other words, the distractors should be equiprobable; otherwise the exam was incompetently constructed.

But what is that purpose? This committee is not the place to discuss what tests are for, but my own preference is what used to be called the "pass-examination," the confirmation of a degree of recognition memory adequate to justify the student's occupation of a place in the next course, or in the office of some bureaucracy that required repetitive response to formulaic challenges. Multiple-choice tests are certainly no way to assess understanding.

So, apart from space management, why should they have any role in the college environment? In my own my college career, where I was a math and physics double major and a general systems minor, I never once took a multiple choice test. Usually my knowledge was tested only in more appropriate forms: worked problems, for which the answer had to

be produced, not recognized; or essay questions. At worst, a test offered a term, e.g., "enthalpy," or "game theory," and required the student to write out a concise definition of the term, again, with no prepackaged alternatives supplied.

Yes, grading essays is difficult. But grading multiple-choice examinations is something for your smart phone to do, not you yourself.

2. Academic sociology. It is unwise to model an argument on the decision of an outside group like the SAT (which, remember, is no longer an acronym; the letters, S, A, T no longer stand for anything) when the purpose of the SAT is itself so obviously oblique to the university's mission. Selection of the best students does not fall under any of the poles of our mission statement; likewise the model of "accurately gauging" a student's "level of knowledge" does not fall under the university's mission. In any case, the technology of admission, whatever its flaws, is surely no model for a technology of assessing our own sector's productivity, which is what we should be doing.

Yes, grading essays is difficult. But grading multiple-choice exams is literally dehumanizing -- it is something for your smart phone to do, not you yourself. And the presence of multiple-choice tests anywhere in this academic setting is indeed regrettable, no matter what the scoring formula; likewise our reliance on the examples embedded in the SAT. I'd be glad to have a conversation on the admission standards of my other academic setting, the University of Vienna, both as regards matriculation in the first place and as regards acceptance into the biology major where I taught. But these notes are not the place.

3. Statistics. The only model I am aware of for test items is the one used in the original Scholastic Aptitude Test of the 1920's (I have their document) and formalized in the Rasch scaling model (Georg Rasch, 1960's). Every test item involves two parameters, an item "difficulty" and a student "ability." The key to a good test is to design a set of items for which these two parameters are the only factors of the response; then both parameters can be estimated. If risk-aversion is indeed a real factor, it, too, needs to be estimated -- this is at the core of today's best theories of the knowledge professions, such as Donald Schon's.

Risk aversion is a relatively permanent human cognitive setting. For use in the professions that require it to be brought under the professional's control, we need to teach our students about this specific parameter and to assess the quality of that teaching. But to declare it unrelated to the assessment of knowledge is to deny the actual practice in most of the professions that our graduates attempt to enter, professions whose professionals need not only to respond to new information from the world but to explicitly manage their own confidence levels in their assessments of those sources of new information -- a circumstance that of course does not apply in the context of multiple-choice exams. Isn't the whole point of the undergraduate curriculum to teach the appropriate self-awareness of risk-aversion versus risk-acceptance settings? How ironic that the ASUW resultion declares it to be "not associated with level of knowledge" -- no, it IS, precisely, the level of knowledge.

By writing out these points in advance I save our committee the time it would otherwise take for me to go down the list across our table. I'd be glad to discuss them further, or, conversely, to be silent apart from uttering the three headings "pedagogy, academic sociology, statistics" and

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leaving the discussion to the rest of you. Thanks for reading this.