

**Submission for
The Kohelet Prize for Excellence in Jewish Education**

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**Title:
JEHMS Program–
Jewish Education for the Humanities, Math, and Science
Does your Jewish Education Sparkle?
Rigorous Middle School Fusion Program to enhance
Secular Studies with Jewish Concepts**

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JEHMS Program: Jewish Education for the Humanities, Math, and Sciences

1. Introduction and Qualifications: My name is Nomi Feinberg. I began teaching 25 years ago at the university level, as a graduate assistant in a PhD program in Political Science and Empirical Policy Analysis. Hosted jointly by the University of California, Los Angeles and the RAND Corporation, a think tank in Santa Monica, I was simultaneously awarded by New York State, permanent dual, secondary teaching certification in social studies and math, based on interdisciplinary coursework in my graduate studies. My Master's thesis included an empirical study comparing mathematical achievement of Korean and African American communities at UCLA, in combination with a survey of correlative socioeconomic factors to discern on the aggregate level potential causes for disparity. Upon graduation I coauthored a book, *Foreign Policy Failure in the White House: The Fall of the Shah and the Iran contra Affair*. I then served at the Crossroads School for Arts and Sciences, Santa Monica, CA, as assistant to Headmaster and Founder, Dr. Paul Cummings, teaching his senior poetry class when he traveled, writing the 25th anniversary history of the school, teaching 10th grade world history and 9th grade algebra. As an aspiring Baalas Teshuva, I moved to Israel and spent one year studying full time in EYAHT, Aish Hatorah's Women's College, and Nive Yerushalayim. I then made Aliyah formally and served in the Israeli Ministry of Health as Senior Academic Advisor to Deputy Director General for International Relations, Gveret Penina Herzog, a"h, wife of Chief Rabbi Yaakov Herzog, and sister-in-law to President Chaim Herzog. I married in 1994, returning to the US, and had 6 children in 8 years. In 2011, I reestablished my teaching career as the Founding Head of Humanities at the Binah School, Sharon, MA, a 21st century, project-based, service-learning environment,

where I was responsible for the design of secular curriculum, the integration of Jewish studies into secular learning, integration of blended learning for the humanities and math, and teaching middle and high school math, social studies and English. I simultaneously taught middle and high school math employing traditional and online programs at the Providence Hebrew Day School and The New England Academy of Torah, Providence, Rhode Island. I am currently in my third year at the Katz Hillel Day School of Boca Raton where I have taught Tefilla, social studies, math, science, and special education. I maintain a flourishing private tutoring practice in language arts and remedial math.

2. Statement of Purpose: JEHMS is a middle school fusion program (adaptable for K–12) which employs original, distinctly Jewish lesson plans to communicate required secular concepts, thereby blending secular and Jewish education to better streamline, unify, and integrate Jewish Day School dual curricula. JEHMS is multidisciplinary and interdisciplinary curricula in math, science, social studies and English Language Arts, aligned with the Common Core Curriculum, to teach secular skills and knowledge by employing Jewish concepts. JEHMS does not replace Judaic studies, rather is revolutionizes the content of secular classes to seamlessly include Jewish learning as it explicates secular concepts. It is worth noting that Common Core is controversial for many reasons. For purposes here, the Common Core is used solely as a standard of the breadth and depth of expected knowledge per grade level, as a standard against which to design topics of study and respective content. JEHMS thereby

introduces a different kind of JCC -- the Jewish Common Core.

3. Statement of Need: The Jewish Day School dual curriculum in the current model, while noble in its bilateral charge to inculcate Jewish identity, values, and knowledge, at the same time that it prepares students for higher education, produces ancillary stress when secular and Jewish studies are viewed as separate and competing disciplines in a zero-sum model of time. Judaic and secular studies exist as mutually exclusive domains, with little to no overlap. Our departments have separate meetings. Our faculty have separate professional development. Our curricula have no common ground. Unfortunately, our students live and breathe the same division we model for them, viewing their learning in Judaics as entirely separate from their core academic subjects. In addition, students struggle with twice as much homework and tests as their secular counterparts who do not participate in Jewish Day School education (JDSE). In some JDSE settings, secular studies may suffer second class status compared to *limudei kodesh*, relegated to afternoons only, when students are tired, or be assigned minimized time slots fewer days per week to accommodate the breadth and depth of Jewish subjects and activities. Or conversely, respect for Judaic studies may be submerged beneath disproportionate importance attached to a high G.P.A., which is often based on secular studies alone, and is seen as the crucial entry ticket to better colleges. Some students who give it their all in both secular and Judaic studies find themselves

exhausted and at an academic disadvantage when they join after-school teams and clubs. We have resigned and conditioned ourselves to believe there is no other way.



JDSE is typically viewed as a zero-sum game ($+1 + -1 = 0$), where an increase in time and resources dedicated to Judaic studies, by definition, depletes time and resources dedicated to secular subjects.

As a result, it is understandable then, that attrition from otherwise interested parties, will likely occur. In more ultra-Orthodox settings, secular subjects can be dismissed as a waste of precious time, which, it may be believed, should be fully dedicated to Torah subjects and values. On the other end of the spectrum, less affiliated and non-Orthodox parents, who may not value Jewish education above a critical threshold, may opt out entirely from a JDSE when, for example, science is offered only 3 instead of 5 days per week. Such parents may be operating out of fear that their child will not receive sufficient or superior secular studies to properly prepare them to succeed in a university setting or the work force. Equally frustrating, for centrist parents who do entrust their children to the dual curriculum of JDSE, commitment can wane as children express concern and fatigue about the meaning and value of Jewish studies in the face of the competition with their secular counterparts for limited post high school programs,

particularly in science, engineering, technology, and math. This is concerning on a civic level, when, for example, the US STEM Education Coalition warns that "Our nation's future economic prosperity is closely linked with student success in the STEM fields." (Source- <http://www.stemedcoalition.org/>). It is also a problem for Jewish unity, and creates a polarization of values and Jewish populations.

Statistics enlighten this discussion and present, at least superficially, a more encouraging (yet artificial) view of the state of JDSE. According to the Avi Chai Foundation 2013–14 census, Day School enrollment is up by 37% since 1998–99! It would seem, therefore, there is nothing to worry about. That Jews wish to survive and are committed to JDSE in great numbers. Deeper analysis, however, leads to a diametrically opposed conclusion: that JDSE is increasingly polarized, serving fewer subpopulations of Jews, is failing a major segment of our people, and is therefore contributing to assimilation, intermarriage, and the demise of diversity in the American Jewish landscape.

Deeper inspection of statistics reveal that most of the JDSE enrollment growth, and the vast majority of new Jewish schools, come from the Chassidic and Yeshivisha World alone, which have increased populations by nearly 110% and 60% respectively. In fact, enrollment during the past 20 years in non- Orthodox Jewish schools has declined overall. In 1998–99, non-Orthodox Jews comprised 33% of all students enrolled in days schools, but now constitute only 13%. This represents a 20% decrease, from 1 out of every 3 students, to 1 out of nearly every 8. The trend is sad and alarming. Explains Dr. Marvin Schick, who

oversees the Avi Chai Foundation census research, this data, “presents the community with an enormous challenge: will day school continue to be a principal instrument for Judaic strengthening among those segments of American Jewish life for whom day school education is a critical determinant of young people’s future Judaic commitment?”

Source: <http://ejewishphilanthropy.com/new-census-of-jewish-day-schools-released/>

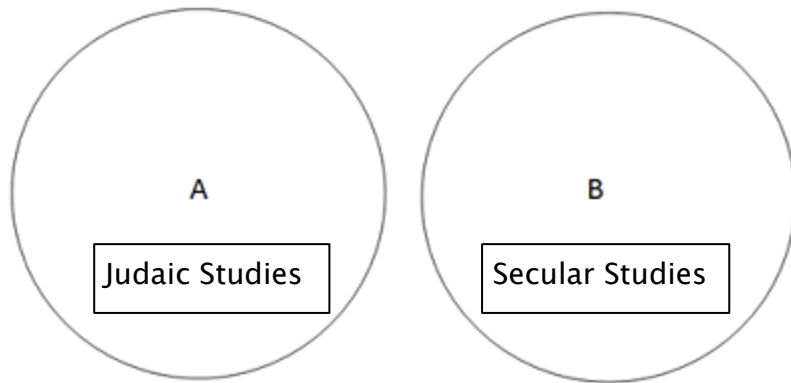
Arguably, in the current model, Jewish Day Schools are failing non-Orthodox Jewish communities, resulting in the attrition of an entire segment of the Jewish population. By failing to attract non-Orthodox Jews, JDSE is, by default, not contributing to Jewish identity where it is so desperately needed, but instead, contributing to the alarming rates of assimilation and intermarriage. The current JEHMS proposal, takes action to reverse this trend and, in meaningful measure, to contribute the survival of all segments of our people, and to promote its diversity. Through interdisciplinary integration, JEHMS offers to improve JDSE for all levels of observance, and is applicable for the entire spectrum of our people.

In order to retain enrolled students, and to be perceived by the wider market place as desirable, so that non-participant parents cross the threshold to become subscribers, and to contribute to our nation's vitality, JDSE needs to produce graduates who are not only committed to Jewish life, but equally strong in Jewish and secular studies, **at the expense of neither.** In an unforgiving, zero-sum game of time, this goal seems impossible to attain. But what if JDSE could outsmart time? What if JDSE could be made radically more efficient? What if, in doing so, the

disenfranchised segment of our population returned to JDSE based on the merit of our program? What if, in turn, our financial resources increased exponentially, as our people, unified in vision, pooled resources for the benefit of all. The JEHMS program seeks to realize a new educational paradigm, through interdisciplinary integration, in order to have it all and to ensure a sustainable, inclusive clientele of Jews from all walks of life. By integrating Jewish and secular studies, and furthermore by integrating English Language Arts (ELA) and social studies using the same idea, JEHMS does more than reach out to court and satisfy the non-Orthodox segment of our Jewish family. By "elevating" secular studies with distinctly Jewish lessons which teach required secular ideas to meet state and national requirements, without sacrificing Jewish focus and academic rigor, JEHMS also offers a crown jewel to the Orthodox and traditional segments of our people. In religious terms, JEHMS bestows kavod on secular studies by recognizing Hashem in math, science, English, and social studies.

4. Statement of Design:

Rather than zero-sum, JDSE would be better viewed as a Venn Diagram, one circle representing secular studies, the other Judaic. In the current model, the circles tend to be mutually exclusive, with little to no overlap.



This depiction is counterproductive, and...is it not accurate. JEHMS, the current proposal, strives to have the circles of knowledge overlap in a meaningful and productive program which reflects what we all know on a deeper level to be true: that the schism between kodesh and secular subjects, is merely an illusion. Overlap between Jewish and secular disciplines is not only possible, it is necessary and real. Just as white light contains the prism of all colors, knowledge is a prism which contains both kodesh and chol. Just as the Jew recognizes that all the multitudes are unified in Hashem, this program includes lessons which operate under the precept that all secular learning is an opportunity to express kodesh ideas; that all knowledge, as it is an expression of Hashem, is one. The JEHMS Program refreshingly draws the separate Venn circles together so that secular and Judaic Studies have surprisingly large overlap, which is win-win for all.



For example, JEHMS creates overlap by using phenomena which are categorically Jewish to poignantly illustrate mathematical concepts; by looking at Jewish global emigration and learning the halachas of keeping Shabbos when crossing the International Date Line in order to learn world geography; by examining during each topic of study in 7th grade biology the major contribution of a Jewish scientist (often a Nobel Laureate) to that specific field; by creating a joint curriculum for social studies and English Language Arts which cultivates grade level skills while inculcating broad knowledge of Jewish life over the ages. As such, the Judaic and secular circles of our Venn diagram move from mutually exclusive toward a more concentric framework, where the two disciplines share content, meaning, and application.

JEHMS consists of different Jewish learning material specific to the core secular discipline it is serving (samples

for each discipline follow below in section 6). To illustrate, JEHMS for 7th grade math, consists ideally of 12 lessons, one for each of the 12 chapters in the text book typically covered during the year. For example, to teach percents less than one and greater than 100, JEHMS focuses student attention on the population of Jews compared to the population in the world. Jews comprise just less than .2% of the world's people, which is an example of less than 1%. This means, in a sample of 100 people from around the world, one would not expect to find even one Jew. One would have to increase the sample size to 500 global citizens to expect to find one Jew. The lesson then continues by examining the percent of Nobel prize winners who are Jewish. According to the Jewish Virtual Library, since the Nobel was first awarded in 1901 approximately 193 of the 855 honorees have been Jewish, or 22%. Hmmm, that is strange. Per their percentage of the world's population, we would have expected only .2% of the winners to be Jewish. It is obvious that 22% is much higher than expected. How much higher? We calculate that $.2 \times 110 = 22$. That means Jews comprise 110 times as many Nobel prize winners as one would predict. That number represent 11,000% more than expected. Here we learn about percentages greater than 100. Source: <http://www.jewishvirtuallibrary.org/jsource/Judaism/nobels.html>

jsource/Judaism/nobels.html

Another example in math is a JEHMS lesson on conversion units and finding common denominators. In order to convert inches into feet, feet into yards, cups into pints, ounces into pounds, centimeters in meters, or any other unit into an equivalent alternate expression, students

are taught to use conversion units, set up as fractions. For example:

Unit Fractions

$$\frac{12 \text{ in.}}{1 \text{ ft}} = 1 \text{ or } \frac{1 \text{ ft}}{12 \text{ in.}} = 1 \quad (\text{since } 12 \text{ in.} = 1 \text{ ft})$$

$$\frac{3 \text{ ft}}{1 \text{ yd}} = 1 \text{ or } \frac{1 \text{ yd}}{3 \text{ ft}} = 1 \quad (\text{since } 3 \text{ ft} = 1 \text{ yd})$$

$$\frac{5280 \text{ ft}}{1 \text{ mi}} = 1 \text{ or } \frac{1 \text{ mi}}{5280 \text{ ft}} = 1 \quad (\text{since } 5280 \text{ ft} = 1 \text{ mi})$$

After practicing with conversion units, the children skip to a review of finding common denominators. They can be asked to add

$$5/8 + 2/5$$

Like conversion units above, students need to convert each fraction to one with a common denominator. This is done by multiplying each fraction by the number 1, in a disguised form. For example, $5/8$ is multiplied by $5/5$ which is the same value as the number 1, although it is disguised. $2/5$ is multiplied by $8/8$ which is a disguised form of the number 1.

$$\frac{5}{8} \times \frac{5}{5} = \frac{25}{40}$$

$$\frac{2}{5} \times \frac{8}{8} = \frac{16}{40}$$

Students are then asked to notice something in common about conversion units, common denominators and the number 1.

Conclusion, in order to convert any measure into an equivalent expression, all you need to do is multiply the original value by one, albeit in a disguised form. The identity property allows us to do so, since anything multiplied by 1 is equal to itself. The tricky thing is, **there are an infinite number of ways to write the number one:** 5/5, 8/8, and 12 inches/1 foot are merely 3 simple examples.

Here we see in mathematics an exquisite example of the Jewish concept we say twice per day in the shema:



Hashem is one and infinite at the same time. The number 1, mathematically has an infinite number of expressions, but they all reduce back to 1, the same intrinsic value, the same thing. Math teaches how to understand the most elusive of Jewish ideas: infinity and 1 are the same thing.

A less philosophical example in math is the JEHMS lesson on unit rates. Cultural specific word problems are used:

Ezra's mother asks him to buy chicken for Shabbos. She tells him she needs 5 lbs of boneless chicken cutlets to make schnitzel, and he should compare prices to get the least expensive brand. At Kosher Market Place, he can get 3.58 lbs for \$21.44. At Winn Dixie, he can purchase 2.36 lbs for \$13.90. Which is the better offer?

5. Statement of Outcomes and Vision: Having employed JEHMS for three years now, there are outcomes to describe and goals to set. JEHMS successfully offers a practical mechanism to ease the burden of time sharing between Jewish and secular studies. Its interdisciplinary nature, by demand, increases communication between secular and kodesh faculty, and between secular teachers. The program decreases homework as kodesh and chol teachers share assignments. This, in turn, reverses student exhaustion, increases productivity, bridges the great divide between secular and Judaic studies in a meaningful way for students, increases Jewish identity and pride (based on anonymous end of year surveys). JEHMS, in theory, will allow greater time to be devoted to "secular" studies since it increases Jewish learning during that time.

JEHMS is still nascent. The grand vision is to create a full service online database arranged similarly to the drop down menu of the IXL web site. See <https://www.ixl.com/> When complete, Jewish educators will be able to scroll over a core discipline (math, science, ELA, and social studies), choose a grade level, choose a topic, and the screen will populate with an age appropriate secular lesson naturally

infused with Jewish learning. The vision also includes the option of traditional brick and mortar workbooks with Jewish oriented lesson plans to inject into the secular core curricula, to explicate and illustrate secular learning goals. The vision also includes mobile in-service training sessions whereby Jewish educators gather to receive instruction and practice interdisciplinary Jewish and secular education. Ideally, in a grand vision, one can imagine a certificate of completion which an educator seeks to attain in order to demonstrate competency in blending the dual curriculum within a given secular core subject. The vision ultimately creates a more sustainable model of Jewish education which is cost and time efficient and casts a wider, inclusive net of subscribers to JDSE.

6. Sample Lesson Plans: The enclosed JEHMS program infuses Jewish learning directly into core secular subjects (science, math, social studies, and English) so that secular and Jewish learning are one, inseparable. JEHMS is a small step in the direction of providing a solution to the difficulties which arise from the dual curriculum in JDSE. JEHMS offers practical efficiency so that secular subjects can be awarded an extended share of time, justified by the substantial infusion of distinctly Jewish concepts into the secular lesson plans, without compromise to the secular syllabus.

The vision of JEHMS is to provide:

1. **MATH:** for every major topic in 7th grade math and corresponding with Common Core Curriculum, one lesson which presents the material through a uniquely Jewish lens.

1 sample lessons is attached: area of a trapezoid, sent under separate cover.

2. SCIENCE: for every major topic in 7th grade biology, the bio-bib of one Jewish scientist who made a major contribution to the advancement of knowledge in that field, is presented. 2 sample bio-bibs are contained in this proposal, sent under separate cover.

SOCIAL STUDIES AND ENGLISH LANGUAGE ARTS: 1 trimester long unit shared by both disciplines, attached under separate cover