

Title of Session: The Global Challenge

Moderator: David Gibson

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Room: After School Online

BJB2: how about if we get started. Elizabeth, can you please let David know where you are located and what you teach?

BJB2: I am a retired communication teacher and am located in Pennsylvania

DrChristo: I teach in a private girls' school in Connecticut. I teach chemistry to 10th through 12th graders.

DavidCG: It sounds like you still teach

BJB2: David, please tell us a little about yourself

DavidCG: I used to teach math, music, philosophy, ethics

DavidCG: and still do I guess, but through remote means

DavidCG: My first field was music

DavidCG: (composition)

BJB2: a reminder that if you are new to Tapped In go to the Actions menu in the top right of the chat and select DETACH

DavidCG: and I play piano and compose still

BJB2: a man of many talents!

DavidCG: the music is for fun and self-fulfillment

DavidCG: but the STEM work I'm doing is for our country

DavidCG: and the world

BJB2 listens eagerly

DavidCG: We have a project that engages about 400 kids a year from a registration group of about 2000

DavidCG: We have 803 students registered now from 58 countries

DavidCG: and they will begin to form teams (and the registration will climb) from now until November

DavidCG: Many of the teams will start to produce a solution to global warming and the future of energy

BJB2: what exactly is the purpose of the project, David?

DavidCG: and about 200 will submit their solutions for judging against a rubric that they've had all year long (next April)

DavidCG: and we'll award over \$60,000 to about 100 of them

BJB2: wow!

DavidCG: We have a social networking site

BJB2: who provides the prize monies?

BJB2: . o O (and funds the project)

DavidCG: the prizes come from NSF and private foundations and gifts

DavidCG: NSF mostly funds it

DavidCG: Here is our partners page:

DavidCG: <http://globalchallengeaward.org/partnerships.html>

BJB2: are you able to open the urls ok, Elizabeth?

DrChristo: Yes, they're working for me.

DavidCG: great

DavidCG: The whole project is a "challenge based curriculum"

DavidCG: by that we mean that we set out a goal

BJB2: open to high school students only?

DavidCG: and we do not care how the students address it

DavidCG: We geared the site for older teens

DavidCG: but we're starting to work on a middle school version

DavidCG: We think that the middle school version will have to be more teacher-directed

DavidCG: and that is un-natural for my thinking

DavidCG: haha

DavidCG: so others are getting involved

BJB2 nods

DavidCG: to help us create an effective teacher-directed experience for younger students

DrChristo: Perhaps you could have mixed high school/middle school groups. Then it wouldn't have to be so teacher-centered.

DavidCG: I usually start by thinking of myself AS a student

DavidCG: and then working out from there to try to make an experience that a teen can figure out on their own

DavidCG: so for example, we say "Save the World on Your Way to College"

DavidCG: people smirk at that

DavidCG: but we're serious

DavidCG: We have about 50 great ideas formed over the past 3 years

DavidCG: and each one has a 100 page document built by a global team of teens

DavidCG: http://globalchallengeaward.org/team_tools/patentoffice.html

DavidCG: We sort them in our "Patent Office"

BJB2 smiles. Cool!

DavidCG: From Trash to Treasure: A Portable Biomass-to-Synfuel Production System" is one example

DrChristo: Do the ideas get implemented?

DavidCG: We hope to see the day...

DavidCG: the issue is that the kids perform pretty large-scale imagination about this stuff

DavidCG: so to "implement " would mean for example, in some cases, getting 25% of cars to run on x instead of y

DavidCG: so to implement their ideas will take scores of more people, sometimes more science, and lots of politics etc.

BJB2: how do you publicize the project, David? Are all high school science classes contacted?

DavidCG: But we want the large scale systems thinking - not the actual production - to be what this is about

DavidCG: we'd like them to grapple with the global impact of something "taken to scale"

DavidCG: so that they can deal with changes in scale as well as with the underlying science, politics and business processes

DavidCG: The rubric they follow is essentially a business plan - like one would need to convince funders

DavidCG:

http://www.globalchallengeaward.org/the_global_/contestrules/gbp_rubric.html

DavidCG: take a look

BJB2 looks

DavidCG: That is the "big prize" rubric

DavidCG: and it takes 4 students about 5 months to complete it

DavidCG: They work after school

DavidCG: on weekends

DavidCG: etc.

DavidCG: I just had a student email today that her mom said she could not do the project because it was going to take too much time

DrChristo: So it would be an after school "club" not part of a class.

BJB2: interesting that the teams have to have some background on industry norms and practices

DavidCG: Yes the 200 kids worldwide who register do so without teachers knowing it

DavidCG: for the most part

DavidCG: A handful of teachers are working proactively with the program, but the vast majority of students name a parent, friend or professor etc.

DavidCG: as the adult they want to work with on this project

DavidCG: Some schools are beginning to form after-school clubs and in one that I visited a couple of months ago in San Fran

DrChristo: Are there steps along the way that they have to submit, or just the big project at the end.

DavidCG: the girls from year 1 were teaching more than the teachers.

DavidCG: The teachers said that they just monitored the club and were around to help when needed

DavidCG: We had a "calendar" with intermediate steps - but nobody followed it

DavidCG: and what we learned was that when working internationally, we needed a listing but no timing

DavidCG: so we now provide a top down list and we tell teams to go at it in any order, any time, and to set their own agendas

DavidCG: Here is the top down list for the biggest challenge;

DavidCG: http://www.globalchallengeaward.org/thisyearschallenge/business_plan.html

BJB2: does the site provide an eFolio for each group?

DavidCG: Yes we use the eFolio as an electronic portfolio record over time of each individual and team

DavidCG: we pre and post on the whole experience and at several spots during...

DavidCG: and it all goes into the eFolio

BJB2: excellent!

DavidCG: the eFolio has features we don't use - like linking to standards

DavidCG: and using the rubric for peer scoring

BJB2: do teams have the opportunity to access the efolio for their portfolios?

DavidCG: we've not been able to develop the support needed to allow the multitude of students to figure all that out

DavidCG: we DO need teachers as mentors and we don't have enough of those

DavidCG: We are training and using former students - once they get in to college

DavidCG: but even then, the introduction of using a rubric as feedback is just too much

DavidCG: and we tried standards linking

DavidCG: but we don't really need that in place and it was interfering with the free flow of ideas by the kids

BJB2: if you write up a short article on what you would need teachers to do, I can put that in the Tapped In newsletter

DavidCG: I might take you up on that!

BJB2: please do ;-)

DavidCG: I think it is more than they'd bargain for in volunteer-type work

DavidCG: We also have been looking very closely at the demographics of kids we get

DavidCG: we have 65% females

DavidCG: doing science on a global scale

BJB2: it also might also be beneficial to create a group room in Tapped In where those mentors could collaborate

DavidCG: thank you for that offer!

BJB2: if you need any help with that, please let me know

DavidCG: Thanks.

BJB2: Elizabeth, any comments or questions?

BJB2 . o O (I'm awed by the scope of this project)

DavidCG: We have not been good at explaining that the project is about team leadership and writing more than science...so we scare off some who should join

DavidCG: but we are getting a very good wide range of kids

DavidCG: that mirror the US (on the US side of the kids)

DavidCG: and they are from a wide range of SES too

BJB2: how are the teams formed?

DavidCG: students do that

DavidCG: a student starts by registering

DavidCG: that places a pin on a map

DavidCG: they can then look for a team to join or create their own

DavidCG: we tell them to create their own and to find 1 friend and 1 adult

DavidCG: that's their "Country Team"

DrChristo: How many people on a team?

DavidCG: then that team finds a matching Country Team from India, China etc -always 4 students on each team - plus 2 adults they have selected

BJB2: language has not been a barrier?

DavidCG: The mapping registration system shows the teams, whose looking, which ones are full, what the students are interested in

DavidCG: It's all in English (thus far)

DavidCG: and I'd say the cultural issues, not language

DavidCG: is more of a barrier

DrChristo: So two teams from two different countries work together?

DavidCG: but it is something that students say is the biggest part of what they learn

DavidCG: right

DavidCG: two teams from two different countries is the basic unit

DavidCG: 2 US and 2 non-US was our original vision

DavidCG: we allow some variation in that

DavidCG: but that is our ideal

DavidCG: So the teams self-form

DavidCG: and once they are an International Team, we give them an eFolio space and a Mentor

DrChristo: Can you link us to the page where students can find each other?

DavidCG: the Mentor is a former student who went through the Challenge

DavidCG: If you don't mind registering as a adult

DavidCG: <http://globenet.globalchallengeaward.org/>

DavidCG: Once you get a personal profile, you can hit a switch that says you are not looking for a team so you won't get inundated with requests

DavidCG: You have to confirm from your email to open the account

DavidCG: so it's a two step process

BJB2: are the mentors screened in any way?

DavidCG: yes we know them all

DavidCG: They are all winners from past competitions who are not in the worlds best colleges

DavidCG: <http://www.globalchallengeaward.org/whygca/colleges.html>

DavidCG: Check out our alumni page. Kids send us their logos once they are in college

DavidCG: Once you are logged in, then go to "Map"

DavidCG: <http://globenet08.globalchallengeaward.org/users>

DavidCG: and that is the matchmaker

DrChristo: Do these proposals ever get submitted to an industry that might start applying them?

DavidCG: We have not seen that yet - although we just brought someone on board who may start to do that

DavidCG: We had Tata of India take a look at two of this year's solutions (the Jatropha plant solution!) and another I can't remember

DavidCG: Tata is huge in India

DrChristo: Good. I think it would be a shame if all that work does not get seen.

DavidCG: like GM in the US

DavidCG: We use outside judges each Spring who include college deans, presidents, legislators, business people

DrChristo: Do the students run any experiments (real or virtual) as to the effectiveness of their solution?

DavidCG: so the solutions do get looked at by external folks - but we can do more to get the word out I think

DavidCG: Mostly virtual modeling

DrChristo: How do they do that? With what program?

DavidCG: STELLA, excel mostly

DavidCG: STELLA is very good and Excel is so ubiquitous and easy

DrChristo: Fabulous! I just bought Stella for my school, and we are going to do some global warming modeling in my chemistry classes this year.

DavidCG: Yes it is outstanding

DavidCG: and a tool that all kids should get to know

DavidCG: Do you know about the Creative Learning Exchange?

DrChristo: No

DavidCG: <http://www.clexchange.org/>

DavidCG: You'll love it - full of teacher -created STELLA models on everything

DrChristo: Wow - that's great! Thanks for the link.

DavidCG: sure

DrChristo: Perhaps if my students get familiar with the Stella program, I can get some recruits for you project.

DavidCG: We have a couple of self-guided units in modeling and complex systems

DavidCG: and we try to make sure that all teams get to those

DavidCG: If their ideas lead them that way

DavidCG: Check out this page of free units

DavidCG:

http://www.globalchallengeaward.org/thisyearschallenge/stem_explorations.html

DavidCG: Each unit of study is designed for kids to read and then to complete at each of 3 levels

DavidCG: Basic, Going Beyond and Going Crazy

DavidCG: You are welcome to use these units in any way you like.

DrChristo: Thank you.

DavidCG: You can assign them as independent study

DavidCG: or integrate them into a class

DavidCG: We have them here to help the teams get background in STEM needed to do a good job on the products

DavidCG: It's sort of a mix or integration of earth science, complex systems, basic science data management, and geo sciences and holistic engineering

DrChristo: I'll be exploring them thoroughly, believe me.

DavidCG: We'd love feedback on them

DavidCG: Especially if you catch any misunderstanding or misrepresentation that we could tighten up

DavidCG: We call these the STEM Explorations

DrChristo: I will let you know.

DavidCG: and each person can do as many of these as they like. Top scorers got \$500 this year from completing most of them

BJB2: David, this has been a remarkable discussion. I'm disappointed that there are not more science and math teachers here. Would you be interested in doing a follow up discussion in September?

DavidCG: sure...let's re-schedule

DavidCG: I should go grab dinner and watch the DNC soon

DavidCG: If you both get into GlobeNet as adults and need any help or question answered, please email me

DrChristo: Thank you, David. I've learned a lot.

BJB2: email me with a date and time asap and I'll try to get it on the September calendar that will be mailed in the next couple of days

DavidCG: OK and thanks so much for your help tonight

DavidCG: I'll look forward to it

DavidCG: bye for now

BJB2: Thank you, David. and Thanks, Elizabeth

BJB2 waves bye

DrChristo: Goodnight.