

Free, open, online, mathematics help forums: The good, the bad, and the ugly

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Abstract: Free, open, online, help forums link students with volunteer helpers who have the time, knowledge, and willingness to provide assistance with specific problems from coursework. Some forums endorse a select learning theory, whereas others do not espouse any one approach. This study shows how student activity differs in a forum that supports Cognitive Load Theory (CLT) and one that does not embrace the practice of any single learning theory. A sample of 100 exchanges on the calculus concept of limit were collected from the archives of a forum of each type and compared for student contributions to the construction of the solution and student initiative in expressing resolution. The results show that the forum supporting CLT evidences lower levels of student activity (both initially and following helper intervention), and favors weak over strong expressions of resolution. The designation of the good, bad, and ugly depends on the reader's epistemological stance.

Today's students are using the Internet as a resource for completing their assignments through participation in open, online help forums. Many such forums, covering a wide variety of school subject areas, are found on websites that are accessible to the general public (open) and allow students everywhere to communicate anonymously and asynchronously with volunteers around the world who have the time, willingness, and experience to help them. Students post queries (usually problem-specific questions from assignments) on these forums when they are seeking help constructing a solution to a problem or when they are seeking verification of a solution that has been constructed. In order to help students construct solutions to their problems, some forums allow any member to respond to the student (e.g., as a helper) and participate in ongoing exchanges. Help in this case is a spontaneous activity, and we refer to these sites as Spontaneous Online Help (SOH). In short, these forums afford convenient, accessible, efficient help to thousands of students, while, at the same time, they transform help seeking and helping from a private, one-on-one activity bounded by physical walls into a public, communal endeavor that spans geo-political boundaries (2007). This contribution to the democratization of education is part of "the good" (Larreamey-Joerns & Leinhardt, 2006); what constitutes "the bad" and "the ugly" depends on the epistemological stance of the reader.

These forums exist primarily for the purpose of helping students. How do they then tackle the monumental and ill-defined task of defining *what it means to help* within their community, especially given the diversity of the members? The answer is that some forums explicitly endorse a select learning theory, whereas others do not espouse any one approach. The purpose of this paper is to explore the nature of student activity in a mathematics forum that uses Cognitive Load Theory (CLT) as its *modus operandi* (Cramster) versus another forum that does not advocate any particular theory of learning (FreeMathHelp). In both cases, the community of helpers is not required to adhere to any mandated pedagogical practices, but rather the corps of helpers has self-selected a forum in which to volunteer. Regardless of enforcement, however, the position taken by the forum administration and helpers on theories of learning and instruction is expected to show up in the manner in which students use the forum as they seek help completing assignments.

Conceptual Framework

Help seeking

These problem statements that students post on the help forums generally stem from routine exercises, commonly referred to as closed tasks. However, if a student is unable to solve such a task without assistance, then the "exercise" has become a "problem" from the student's perspective (Selden, Selden, Hauk, & Mason, 2000). In this way, the forums are instantiations of help seeking, an activity that no longer carries the stigma of incompetence or stupidity (Nelson-Le Gall, 1981). In fact, quite the opposite may be true, as students engaged in help seeking can be proactively taking responsibility for acquiring new knowledge and skills (Resnick & Nelson-Le Gall, 1997, p. 150). Help seeking, *with appropriate performance goals*, has strategic value in the learning process. Nelson-Le Gall (1985) distinguished between "executive" or dependency-oriented help seeking that is associated with performance goals ("Just tell me the answer") and "instrumental" or mastery-oriented help seeking ("Give me a clue!"). Now, given that students are seeking help using open, online, homework help forums to construct solutions to routine exercises, the question is: In what ways are students acquiring the knowledge and skills that allows them to complete their assignments?

Alternative learning theories advocate different definitions of what type of help is conducive to learning. I now turn to one learning theory that has a lot to say about how students learn.

Cognitive Load Theory (CLT)

CLT is a theory of learning developed by Sweller (1988) that is based on the limited capacity of working memory and emphasizes the need for instructional design to minimize cognitive processing or load. Determining pedagogical practices that are consistent with this theory has therefore been a central part of the research agenda (Kirschner, 2002). The use of worked examples is one such practice that has been extensively researched (Atkinson, Derry, Renkl, & Wortham, 2000). The provision of worked examples as a study tool has been shown to facilitate near transfer, require less acquisition and performance time, and require less mental effort than engaging in problem solving or exploration (Paas & Van Merriënboer, 1993; Sweller & Cooper, 1985; Tuovinen & Sweller, 1999; Van Merriënboer, Schuurman, De Croock, & Paas, 2002), at least for students who are really unfamiliar with the material (Kalyuga, Chandler, Tuovinen, & Sweller, 2001).

Of course, no self-respecting cognitive load theorist would claim that worked examples are, in and of themselves, a magic bullet. It is the way in which students engage with worked examples that determines how much help they provide. For instance, students who self-explain worked examples learn more deeply than students who simply read through them (Chi, Bassok, Lewis, Rieman, & Glaser, 1989) or copy them (Chi, 2009).

The Cramster forum advocates providing worked examples as an effective means of providing help. Drawing explicitly on CLT, they claim that this is the best and most efficient way of helping students with their homework assignments.

Methods

The objective of this project was to investigate the nature of student activity on sites with differing adherence to theories of learning. Two open, online, mathematics help forums were chosen, one that espouses CLT and one that does not endorse any given learning theory. In addition, Cramster.com has a reputation system (Dellarocas, 2003) in place that allows students to rate the contributions of helpers, whereas FreeMathHelp does not. Associated with this distinction is the fact that Cramster offers subscription levels that increase the weight of ratings for others' contributions.

Because of the exploratory nature of this work, an observational methodology was adopted (Goodyear, Jones, Asensio, Hodgson, & Steeples, 2005). In order to draw comparisons across the two sites, I gathered 100 exchanges from the archives of each forum on a single calculus concept, the limit, by conducting a search on "lim*." Although there are arguably many concepts in calculus instruction that surface on the help forums and that could have served my purpose, the limit concept took precedence, being both foundational and poorly understood by students (Cornu & Tall, 1991; Szydlik, 2000; Tall & Vinner, 1981). The Cramster postings were first gathered in December, 2008 and the search was performed on exchanges dating back from November, 2008. These dated back to September, 2008 and were compared with a set of analogous exchanges from the archives of FreeMathHelp that had been gathered for previous research. The FreeMathHelp corpus dated from April, 2008 to January, 2007. The differing time spans covered by the searches (3 months for Cramster versus 15 months for FreeMathHelp) reflects the relative popularity of the two sites; Cramster receives much more traffic than FreeMathHelp. Because Cramster offers subscription and FreeMathHelp operates strictly gratis, the Cramster search specified that only exchanges initiated by nonpaying Cramster members be included. However, the Cramster sample may include some students whose status changed between the time of posting and the time of data collection.

Site Descriptions

Cramster

www.cramster.com (Cramster) is a global study community for help in many subjects, including physics, math, science, and engineering. The site was launched in 2003 by Cramster, Inc., a private company headquartered in Pasadena, California. The site advocates CLT and has been recently endorsed by well-known educational theorist, John Sweller, who is also a member of the Cramster Academic Advisory Board: "Cramster provides an effective learning environment for difficult and complex concepts. I strongly recommend to any student."

In addition to the discussion forum or Q&A board, the site provides access to study materials such as textbook solutions, topic notes, sample problems, and practice exams that were created by the administration, indexed from the web, or contributed by members. Although general membership is free, participants can elect to subscribe monthly (\$9.95/month) or annually (\$49.95/year) to enjoy additional site benefits and access. Members have access to user profiles that include self-volunteered information on school, major, and expertise. In each contribution, members are characterized by a self-selected username, an optional avatar (static or animated picture that represents the user), board level (ranging from Rookie to Oracle), and "karma."

Karma is acquired through participation in site activities (such as answering queries on the Q&A board, submitting solutions to textbook problems, challenging others' solutions, providing notes, quizzes, outlines, etc., and referring friends to become members) and is based on an intricate point system. For the Q&A board that is

the focus of this study, karma points depend on the rating awarded by the member who asked the question (Lifesaver, Helpful, Somewhat Helpful and Not Helpful), their membership status, and the difficulty level of the board. Karma points can be redeemed for gift certificates and prizes. On the part of students, rating responses is voluntary but does affect the student's "respect score" (the number of answers the student has rated divided by the number of answers provided to that student).

In addition to standard Terms of Use for activity on the Internet, Cramster has an Anti-Cheating policy posted: "Copying solutions or posting unexplained final answers on the Q&A Board promotes completion without comprehension, and that's something we don't support on this site."

FreeMathHelp

www.FreeMathHelp.com (FreeMathHelp) is an advertisement-supported mathematics help portal established in 2002 by Ted Wilcox, who was, at the time, an enterprising high school junior. The site contains 10 homework help forums organized by subject area (ranging from arithmetic and pre-algebra to calculus and differential equations). The sole requirement for becoming a forum member is registration (which entails agreeing to abide by terms for permissible content and/or conduct, providing a username and e-mail address, and selecting a password). Forum members can initiate threads in a discussion forum (e.g., as students posting mathematics questions) and can respond to others' posts (e.g., as helpers). Forum members also have access to user profiles that include self-volunteered information on occupation, residence, contact information, as well as statistics on discussion board activity.

This site does not espouse any one pedagogical approach. At one time, a lengthy and passionate debate was held in the community forum by prominent helpers concerning the nature of the assistance that helpers should be allowed to provide. The suggestions covered a wide range of possibilities, from banning helpers who provided "copy-ready" solutions to creating a separate forum for those who wished to provide worked solutions. The final decision, made by Ted as forum administrator, was to allow helpers to practice any form of pedagogical assistance, with a request for helpers to respect and not interfere with the helping strategies employed by others in the community.

Forum "netiquette" (Shea, 1994) is located in a "sticky" that is the lead posting within each help forum. Although the forum does not ascribe to any particular learning theory, students are encouraged to show all of their work. The rationale is that, by doing so, helpers are more able to detect the source of student difficulty and the forum can operate efficiently. If, for instance, no work is shown, then helpers may assume that the student only needs help getting started, or, if only partial work is shown, then helpers will not be privy to errors in undisclosed portions of the solution.

Analyses

The objective was to illuminate differences in student behavior depending on the forum. Analyses of student activity were designed to capture the trajectory of understanding from the perspective of the student over the course of a given exchange: initial and post-intervention (during), and final. Each exchange was therefore examined for the presence of student assertions and proposals of mathematical actions, both in the *initial* posting in which a query was presented as well as following helper intervention *during* the ensuing thread. Examples of actions that were taken as evidence of student activity included suggestions of a solution procedure, proposals of solution steps, and follow-throughs on others' proposals. In order to be inclusive in this analysis of help-seeking activity, even instances that were hedged or offered in a hesitant manner, were counted. The last contribution made by the student in each exchange and the ratings provided by students on the Cramster forum were used as indicators of the *final* state of understanding, that is, as an expression of how the student felt about the resolution of the problem. The strength of resolution was further characterized as "weak" (expressions of gratitude) or "strong" (reflection on why or how interaction was helpful). These overt activities (contributing to the construction of the solution and initiative for expressing resolution) reflect student agency (Greeno, 2006) and characterize interactive activities (Chi, 2009).

Results

Contributing to the construction of solution

Figure 1a shows the percentage of threads in each forum according to the presence of student suggestions and proposals for action in the initial posting and subsequent thread: [0 0] (no student activity), [1 0] (student activity only in the initial posting), [0 1] (student activity only after the initial posting), and [1 1] (student activity in both initial and subsequent postings in the thread).

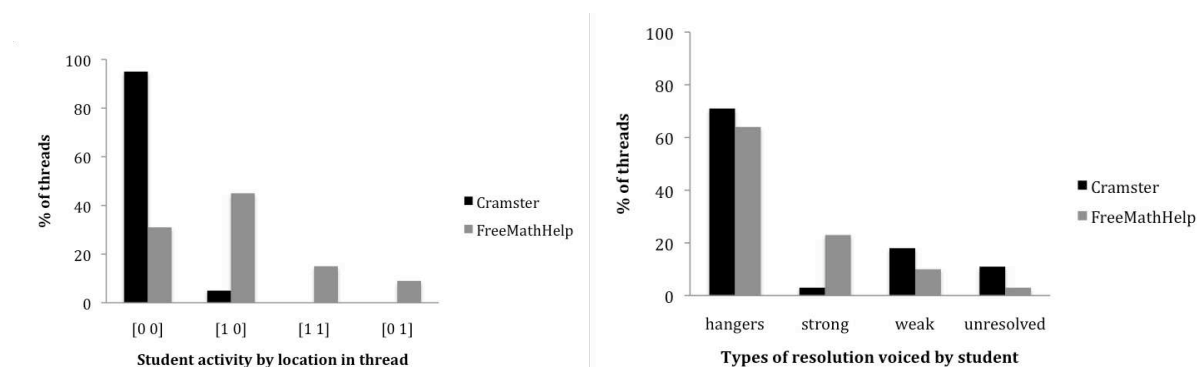


Figure 1. a) Student contributions to construction of solution; b) Student expressions of resolution by type

There are two noteworthy results here: first, Cramster contained *no* threads in which student activity increased following helper intervention ([0 1]) or in which student activity was present throughout the exchange ([1 1]), and second, *virtually all* (95%) of this site's exchanges were completely devoid of any student mathematical activity ([0 0]). On this site, students pose their queries without showing work and the helpers almost exclusively contribute worked solutions (see Figure 2). In contrast, the majority of the exchanges (69%) in FreeMathHelp contained evidence that students were actively contributing to the construction of the solution, either in the initial post or in response to helper assistance (see Figure 3).

The most sensible explanation for these results can be found in the differential nature of the help provided on the two forums. On Cramster, 98% of the helpers' first interventions (the first response received by the student) consisted of a full worked solution; not surprisingly, there was no need then for students to contribute to the construction of the solution. On FreeMathHelp, however, only 23% of the first interventions could be classified as a worked solution. Thus, in many cases, a worked solution was not provided by a helper, and students could still contribute to the construction, if they chose to do so.

Initiative for expressing resolution

There are several ways that a participant can indicate that an issue has (or has not) been resolved. First of all, participants can be silent and opt not to further contribute to an exchange. Silence in computer-mediated exchanges may indicate acceptance or rejection of another's contributions and does not offer evidence for (or against) the achievement of resolution. Thus, in the forum discussions, if a student does not return to the exchange following helper interventions, it is not clear whether the student feels that the issue has been settled or not. I refer to exchanges of this type as "*hangers*" since other forum participants are, in some sense, left hanging regarding the helpfulness of their contributions. On the other hand, when a student does explicitly acknowledge helpers' contributions, they can do so in either a *weak* or *strong* manner. For instance, an expression of appreciation, such as "Thank you," indicates a weak level of resolution on the part of the student since this may simply be a residual of polite manners, that is, a customary response to receiving assistance. Also, if a student simply rates the quality of received help, then this rating is indicative of weak resolution since it does not signify how the interaction was helpful. In contrast, the contribution of mathematical actions (e.g., the presentation of a solution to the problem) and assessments (e.g., reflections on the ways in which the intervention helped) are stronger indications that the issue has been resolved to the satisfaction of the student. Finally, an exchange can evince a lack of resolution or be *unresolved*, when a student receives no response to a query or receives a refusal from forum tutors to provide further assistance.

Figure 1b shows the percentage of exchanges for each forum in which resolution could not be determined (hangers), in which resolution was evident and the strength of the expression (weak versus strong), and in which the issue was unresolved.


Given the informal and transitory nature of these interactions, it is not surprising that the majority of exchanges were characterized as hangers in both forums. However, those that did evince some degree of resolution showed a different pattern in Cramster versus FreeMathHelp. First of all, in Cramster 11% of the exchanges were unresolved, with 4% demonstratively unresolved following helper intervention. In contrast, in FreeMathHelp, only 3% of the exchanges were unresolved, which is the worst outcome of forum participation from a student's perspective. Also, although the expression of resolution is promoted in Cramster because of the "respect score," there was a higher percentage of expressions of resolution on FreeMathHelp (33% versus 21%), as seen by collapsing over resolution strength. A distinction between strong and weak resolution showed an additional difference in this aspect of student activity across the two forums. In Cramster, expressions of weak resolution (18%) were more prevalent than strong (3%), whereas this trend was reversed in FreeMathHelp, in which strong resolution was indicated in 23% of the exchanges, whereas 10% showed weak resolution. It appears that Cramster favors the demonstration of weak resolution (if any), in which students either provide a


rating or express thankfulness, but fall short of remarking on the way in which they received useful help and gained understanding (see Figure 2). In contrast, something about the interaction in FreeMathHelp encourages students to express resolution, with no incentive, reflect publicly on the way that the help received contributed to their understanding of the mathematics in question (see Figure 3).

Examples

Cramster

Figure 2 shows a prototypical example of a Cramster exchange derived from the in-depth analyses of student activity. The student, **Ali**, did not contribute in any way to the construction of the solution ([0 0]) and gave the helper, **fatbuddha**, a lifesaver rating (weak resolution) following the provision of a (sparsely) annotated worked solution. **Ali** typed in the text of the exercise, **fatbuddha** constructed the solution, and **Ali** evaluated the reply. The entire transaction took only 11 minutes, where the median length of time until a student received a first reply in the Cramster sample of 100 exchanges was 26 minutes. The exchange is remarkably impersonal and devoid of social interaction.


Question:




Ali posted by Ali on 11/9/2008 8:47:06 PM | status: Live

Find The limit please

Course	Textbook	Chapter	Problem
Calculus	N/A	N/A	N/A

Question Details:
Find the limit.
 $\lim_{x \rightarrow 0} (e^x + x)^{1/x}$

Tags: Calculus, Calculus



fatbuddha
Scholar
Karma Points: 366
Private Message

posted by fatbuddha on 11/9/2008 8:58:30 PM | status: Live

Asker's Rating: Lifesaver

Response Details:

$$\lim_{x \rightarrow 0} (e^x + x)^{1/x} = 1^\infty$$

Rearrange to

$$\ln(L) = \lim_{x \rightarrow 0} \frac{\ln(e^x + x)}{x} = \frac{0}{0}$$

So we can use L'Hopitals

$$\ln(L) = \lim_{x \rightarrow 0} \frac{\frac{e^x + 1}{e^x + x}}{1}$$

$$\ln(L) = \lim_{x \rightarrow 0} \frac{e^x + 1}{e^x + x} = \frac{2}{1}$$

So

$$\ln(L) = 2$$

And

$$L = e^2$$

Answers:

[Answer Question](#)


Figure 2. Cramster exchange showing absence of student activity and weak resolution.

FreeMathHelp

Figure 3 contains an example of an exchange from FreeMathHelp. Although not prototypical in the sense that the student, **jerry**, contributes to the construction of the solution throughout the exchange ([1 1]), this example captures the flavor of many interactions that take place on this help forum. When **jerry** poses the query, he includes a suggestion, albeit hedged, for constructing the solution, namely substitution. **Jerry** suggests that the

goal to the solution is finding the right substitution, but does not specify the substitutions that he has tried but which “didn’t seem to lead anywhere.” The first helper, **pastel**, provides the substitution, requisite trigonometric identities and outlines the rest of the solution, but stops shy of providing a worked solution. Shortly after this help is received, **jerry**, returns to the exchange, comments on the insight he has gained because **pastel** showed him the rearrangement of terms, and contributes the rest of the solution. Although **jerry** has indicated that the issue has been resolved from his perspective, a second helper, **skooter**, comes on the scene and suggests through hinting that the limit can also be framed alternatively as the definition of a derivative. In response, **jerry**, returns once again, expresses appreciation, and comments on how he has gained new insight on this problem, thanks to **skooter**. The exchange gives a definite sense that **jerry** has experienced “Aha!” moment(s) and an almost tangible feeling of excitement that is expressed through **jerry**’s use of [very happy] emoticons.

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[SPLIT] $\lim_{x \rightarrow a} (\sin x - \sin a) / (x - a)$

Moderators: tkhunny, Gene, stapel, **Ted**, galactus

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5 posts • Page 1 of 1

[SPLIT] $\lim_{x \rightarrow a} (\sin x - \sin a) / (x - a)$

by **jerry** on Sat Nov 10, 2007 2:29 pm


We should do this without L'Hopital's rule.

The limit is:

$$\lim_{x \rightarrow a} \frac{\sin x - \sin a}{x - a}$$

Again the hardest part is probably figuring out the "right" substitution, anything I tried didn't seem to lead anywhere...

jerry
New Member



Posts: 23
Joined: Sat Jun 02, 2007 8:47 pm

by **pastel** on Sat Nov 10, 2007 3:08 pm

Since the majority of the proofs that this limit is the cosine, and since they all use the "x + h" form, you might want to substitute "a + y" for "x", so you have:

$$\lim_{y \rightarrow 0} [(\sin(a + y) - \sin(a)) / y]$$


Then use trig identities:

$$\begin{aligned} \sin(a + y) &= \sin(a)\cos(y) + \cos(a)\sin(y) - \sin(a) \\ &= \sin(a)[\cos(y) - 1] + \cos(a)\sin(y) \end{aligned}$$

Split the limit into two pieces. As $y \rightarrow 0$, you have the $\sin(y)/y$ going to 1, and the $[\cos(y) - 1]/y$ going to zero. See if that helps. 😊

Alex.

pastel
Elite Member



Posts: 9748
Joined: Wed Feb 04, 2004 2:16 pm

by **jerry** on Sat Nov 10, 2007 3:23 pm

Thanks, Alex!

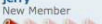
I actually tried that, but silly me didn't see that I could split it at the end.

So I get:

$$\lim_{y \rightarrow 0} \frac{\sin a \cdot (\cos y - 1)}{y} + \lim_{y \rightarrow 0} \frac{\sin y \cdot \cos a}{y} = 0 + \lim_{y \rightarrow 0} \cos a = \cos a$$

Yay 😊.

jerry
New Member



Posts: 23
Joined: Sat Jun 02, 2007 8:47 pm

Re: [SPLIT] $\lim_{x \rightarrow a} (\sin x - \sin a) / (x - a)$

by **skooter** on Sat Nov 10, 2007 3:27 pm

jerry wrote:
We should do this without L'Hopital's rule.

The limit is:

$$\lim_{x \rightarrow a} \frac{\sin x - \sin a}{x - a}$$


Again the hardest part is probably figuring out the "right" substitution, anything I tried didn't seem to lead anywhere...

maybe this is simply a problem of "recognition" ... ?

$$\lim_{x \rightarrow a} \frac{f(x) - f(a)}{x - a} = f'(a)$$

... just an illegitimate tutor paddin' the post count.

skooter
Senior Member



Posts: 2158
Joined: Fri Dec 16, 2005 1:49 am
Location: Fort Worth, TX

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Re: [SPLIT] $\lim_{x \rightarrow a} (\sin x - \sin a)/(x - a)$
 by jerry on Sat Nov 10, 2007 3:47 pm

skooter wrote:
 maybe this is simply a problem of "recognition" ... ?

$$\lim_{x \rightarrow a} \frac{f(x) - f(a)}{x - a} = f'(a)$$

Wow, very insightful 😊.

I'm used to an alternative definition of the derivative: $\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h} = f'(x)$ So I didn't see it.

jerry
 New Member
 Posts: 23
 Joined: Sat Jun 02, 2007 8:47 pm

Figure 3. FreeMathHelp exchange showing student activity and strong resolution.

Discussion

The message of this paper is that student activity looks dramatically different on two open, online, calculus, help forums. On Cramster, the forum in which CLT is the modus operandi, students do not contribute to the construction of the solutions, and favor weak over strong expressions of resolution. A typical dialogue frame (Graesser, Person, & Magliano, 1995) for interaction on Cramster consists of a student presenting a problem statement, a helper contributing a worked solution, and, perhaps, the student rating the help received. In fact, the primary instructional sequence is the traditional IR/E pattern from classroom discourse (Mehan, 1982), but with an monumental twist – the role of instructor and student is reversed. It is the student who initiates the interaction by asking a question (I), the helper who replies with the answer (R), and the student who evaluates the response (E). In contrast, on FreeMathHelp, the forum in which helpers to not adhere to any particular learning theory, students often initiate or follow-up on the construction of the solutions and favor strong over weak resolution by sharing how the interaction was helpful. Here, there is evidence of extended dialogue frames that include student contributions and reflections. Evidence for computer-supported collaborative learning (such as the joint construction of solutions) can be seen in interactions in FreeMathHelp.

However, the observational methodology employed by this project prohibits making stronger claims than the existence of these differences. First, only published contributions were part of the analysis. Private messaging is a feature of both forums, and may be more frequently used in Cramster since helpers can only receive karma for their initial response to a student. This policy may well encourage students and helpers to communicate off-line. Anonymity adds another layer of complexity to interpreting results, since participants could have multiple usernames linked to different accounts. Fortunately, however, multiple participants cannot have the same username. Finally and more importantly, the measures cannot speak to the effect of forum participation on student performance in the classroom. The dramatic difference in the nature of student activity across the two forums raises the question whether student learning also dramatically differs. This is a question that must be answered in the context of an experimental study.

Open, online, help forums are being used by students throughout the world and have become part of their learning experience. As an emergent resource, we must determine their potential for instruction and learning. In particular, there is a pressing need to delve into what constitutes the good, the bad, and the ugly for this resource that students and helpers are frequenting. Returning to the title of this paper, what can we say at this point?

- The Good: Open, online forums are a means of connecting students seeking help with those who can provide it in an efficient, cost-effective manner. Students who might not otherwise have access to help are able to ask for help in a non-threatening environment. The forums also present an opportunity for educators and researchers to reach students beyond the walls of the classroom.
- The Bad: What counts as “bad” depends on the epistemological stance of the reader. Different forums offer different definitions for what it means to help students. From the perspective of a cognitive load theorist, providing worked examples is not bad. However, a constructivist would rather have students construct their own solutions and would probably consider Cramster to be an anathema.
- The Ugly: Given the open nature of the forums, official forum policies and educational philosophies can be abused or ignored. Things can get “ugly” in any forum, regardless of its ideals. Students can abuse the forums by asking for too much help, by mindlessly copying solutions, and by trying to use the forum to replace instruction.

John Sweller’s recent endorsement of Cramster is evidence that education researchers are becoming aware of (even associated with) open, online, homework help forums. This paper intends to start a discussion on the design, use, and analysis of these learning activities that are happening “in the wild.” One of the most important questions that this exploration has raised but admittedly danced around is whether worked solutions are an effective choice for helping students in the forums, and, if they are, then why forums, such as FreeMathHelp,

that offer alternative approaches thrive. I will say that Cramster paints a picture of mathematics as an activity in which the goal is to reach answers, and the faster this is accomplished, the better. Even if students are using the solutions they get on Cramster as worked examples to help them complete additional exercises on their own, these students are still being sent a message about the nature of mathematics that seems problematic for those who love the subject and want students to share this passion.

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