

# Supporting Synchronous Collaboration in K-12: Initial Experiences Using The WeCollablify App Suite

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**Abstract:** K-12 educators are being called on to support students in developing collaboration skills. Towards providing technological scaffolding for synchronous collaboration, we have developed a suite of “collabified” productivity tools for mobile devices. In this tutorial, then, participants will learn about how classroom teachers are using the WeCollablify suite of collabified apps, then the participants will gain first-hand experience in using those collabified apps, and finally on the basis of those experiences, participants will engage in discussions about curriculum, research, and software development as those topics relate to support for synchronous collaboration in the K-12 classroom.

**Keywords:** synchronous collaboration, asynchronous collaboration, mobile learning, K-12 classroom experiences

## Introduction: Technological Support for Synchronous Collaboration

- “Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively.”

### Common Core State Standards –

#### College and Career Readiness Anchor Standards for Speaking and Listening

The above is not just one of the standards... it is one of the ANCHOR standards. It is core to the core! It underpins all the other standards!

To address the need to support teachers in helping their students develop collaboration skills, we have created a suite of “collabified” productivity apps – available at no cost – that can be used across grades and across subject areas. By “collabified” we mean that the app supports two or more students, working together, simultaneously co-creating, while each student is on his or her own computing device (e.g., an iPad). And, students need not necessarily be co-located: rather than sitting, face-to-face, around a black, sink-based science table, each student in the collaboration group could be sitting at his or her kitchen table – all the while verbally talking to each other through their computing device (e.g., an iPad) using VoIP (Voice over IP).

- WeWrite+ - This app supports students in co-authoring text-based documents. While the Google Docs Editor, the Grand Daddy of collabified text editors is geared to the secondary grades, WeWrite+ is being consciously designed for grades 1-6.
- WeMap – This app supports students co-creating concept maps.
- WeKWL – This app supports students co-developing KWL charts.
- WeSketch+ - This app supports students co-authoring drawings and animations.

All these apps – available free on the iOS and Android stores – work on iOS devices and on Android devices; indeed, each app interoperates, e.g., three students could be in a collaborative session using WeWrite+, with two students on iPads and one student on an Android tablet. So far, these tools have been used in 1<sup>st</sup> grade, 2<sup>nd</sup> grade, 7<sup>th</sup> grade and 8<sup>th</sup> grade – in science, social studies, language arts, and math in Michigan and California.

## Tutorial Issues: Leaders and Their Backgrounds

**Dr. Cathleen Norris, Regents Professor, Department of Learning Technologies, University of North Texas.** Before moving to the University of North Texas, Cathie was a high school mathematics and computer science teacher for 14 years. In recognition of her outstanding

teaching, the Dallas Public Schools awarded her the district's Golden Apple Award. Cathie has been President of the International Society for Technology in Education (ISTE), the leading international organization for technology-minded educators. From 1991 to 2001, she was the President of the National Educational Computing Association (NECA) that organized the premier conference on technology in K-12.

**Dr. Elliot Soloway, Arthur F. Thurnau Professor, Computer Science & Engineering Department, University of Michigan.** Elliot has published over 200 articles in books, journals, and magazines, and has received numerous national awards, e.g., in 2002 Elliot was selected to receive the ACM SIGCSE Outstanding Contribution to Computer Science Education Award, as well as university awards, e.g., in 2001, the undergraduates at the University of Michigan selected him to receive the "Golden Apple Award" as the Outstanding Teacher of the Year at UM, and in 2004 and again in 2011, the College of Engineering HKN Honor Society awarded Elliot the "Distinguished Teacher of the Year Award." Elliot is the Past Chair and Grand Poobah of ISTE's SIGML – Special Interest Group on Mobile Learning.

Both Cathie and Elliot have given Keynotes, Invited Presentations, and workshops/tutorials at state, national, and international conferences since 1995. A version of our proposed tutorial was given at the following conferences: AACE eLearn 2014 Conference in New Orleans in Oct, 2014; TISE XIX International Conference on Technology and Education, Fortaleza, Brazil, Dec. 2014.

### **Theme and Goals of Tutorial**

Web 2.0 technologies have been about support for asynchronous collaboration, e.g., SMS, Facebook, etc. support post, re-post, re-re-post-type of interactions. But, Social 3.0 technologies will be about support for synchronous collaboration – where individuals are interacting in real-time, verbally interacting, feeding off-each other's ideas while co-creating artifacts, co-browsing in databases, etc. While the Google Docs Editor has been the leading example of support for synchronous collaboration, there is about to be an explosion in collabrification technologies. Indeed, we predict that with 3-4 years virtually all apps and websites will be "collabrified."

Inasmuch as every leading educational organization promotes collaborative learning, having technological support for synchronous collaboration should bring about substantive changes in how K-12 teaching and learning takes place. For example, in classrooms, teamwork will become easier to do and thus will become the norm. Outside the classroom? Never again should one have to learn alone, e.g., stuck doing a homework problem? Tap connect and a peer or a tutor can join in!

In this tutorial, we will explore the use of the WeCollabrify suite of educational productivity tools for K-12. Participants will use their own mobile devices (iOS, Android) and work synchronously with others to co-author various types of artifacts. Based on those experiences, a significant amount of time in the tutorial will be in conversation exploring the following issues:

1. Curricular issues: How can the current apps be used in classrooms? What other collabrified apps are needed and how can they be used in classrooms?
2. Research issues: How assess the impact of synchronous collaboration on student achievement?
3. Software development issues: What are the issues involved in "collabrifying" existing apps? How can our Collabrify SDK (software development kit) be used by others – for free – to collabrify their educational apps?

4. Free Collabrification Service: Our team is prepared to collabrify other's educational apps for free.

## **Background: Key Components of Synchronous Collaboration**

### **1. Synchronous Collaboration vs Asynchronous Collaboration**

Web 2.0 was all about supporting ASYNCHRONOUS collaboration, where an individual posted a comment (e.g., in SMS, in Facebook, in Flickr) and another person responded with a posted comment. In Social 3.0, the next turn of the technology crank, there will be support for SYNCHRONOUS collaboration: two or more individuals working together, co-authoring an artifact, in real-time.

In our everyday "analog" world, we are quite accustomed to working synchronously with others; two heads are better than one in solving a problem! Finally, in the digital world, the technology is strong enough –networks are robust and devices are ubiquitous – to enable us to work together *synchronously*, to feed off each other's ideas, and invent something that is the product of our joint effort.

### **2. Collaboration is NOT Equal to Cooperation!**

In the vernacular, we often use the terms collaboration and cooperation interchangeably. But, in education, we need to be more careful.

- Collaboration: working together to develop a shared understanding
- Cooperation: working together, helping each other, to do a task

Collaboration has a cognitive goal; cooperation is about working to accomplish a task. At the end of a collaborative activity, when all the parties walk away, each individual walks away with the same, shared, common understanding. In contrast, after a cooperative activity, the task is completed, but there is not necessarily a cognitive impact.

### **3. Learning is IN the Conversation.**

In a collaborative conversation, as the participants work to solve the problem at hand, invariably questions and disagreements arise. It is precisely as collaborators address questions and resolve disagreements that learning takes place. In talking with Sr. Rebecca's 7<sup>th</sup> and 8<sup>th</sup> grade science students, they identified two benefits of collaborative conversations:

- A student's ideas become clarified during the conversation
- Students get new ideas from their peers during the conversation

And the artifacts that the students co-create using the WeCollabrify apps, play a critical role in those collaborative conversations: the artifacts serve to concretize, to reify, the conversation. In effect, the artifacts are both the drivers of the collaborative conversation and the residue of the conversation.

### **4. Face-to-Face Synchronous Collaboration vs NON co-located Synchronous Collaboration**

Every learner has had the following experience: working on homework, at the kitchen table/in a bedroom, and hitting a big snag: confusion, a misunderstanding. For example, how frustrating is it to watch a Khan Academy video or a flipped-classroom video for the 3<sup>rd</sup> time and STILL not "get it" – and still not understand?

While WeCollabrify apps are great for face-to-face support in the classroom, their real potential is to support synchronous collaboration when the collaborators are not co-located, are not face-to-face. Its 8:30pm, you are sitting at your family's kitchen table, the test is tomorrow, and you

are confused about how the water cycle really works. Using VoIP on the mobile device, call a friend on Google Hangouts, jump into WeMap together, and create a concept map that lays out the water cycle process. Learn together; it works!

With apps like those in WeCollabrify, one never has to learn alone again. (Oh, for those using Khan Academy videos, check out YesWeKahn on the Android Play Store; watch a Khan video with a friend, or two, while talking AND while drawing/writing/concept mapping!)

## **5. Classroom Use of the WeCollabrify Apps**

Here are some stats, noted by our collaborating teachers:

- 1:1 – Each child in the classroom has his or her own device. Two children on one device might sound like two collaborating children, but in fact, whoever has the device “wins” – whoever has the device controls the conversation, controls the learning. What the teachers have told us is this: with each student having his or her own device, each child has an equal opportunity to have his or her ideas, his or her voice, heard!
- 20-40 minutes per session – The amount of class time per use seems to vary between 20-40 minutes. Though, in Sr. Rebecca Mierendorf’s class, she has been known to give her 7<sup>th</sup> & 8<sup>th</sup> grade science students 5 minute assignments on WeMap/WeKWL!
- Used across subjects: The 1<sup>st</sup> and 2<sup>nd</sup> grade teachers report using WeMap/WeKWL for science, English, social studies – and even math!
- Used weekly: Also, the teachers report using the tools on a regular basis, e.g., 1-2 times per week, every week.

In this tutorial, we will provide concrete examples of how the WeCollabrify suite of tools is being used in K-12 classrooms.

## **Expected Outcomes and Contributions**

The use of technology support for synchronous collaboration in the K-12 classroom is in its earliest stages. However, with the increased ubiquity of mobile devices in the classroom, the increased robustness of networking support in schools, and the increased ability to create collabrified apps, researchers and educators need to be prepared for the explosion of collabrified software that will become available. This tutorial provides participants with some initial experiences in both using collabrified apps and in reflecting on those experiences in conversation with other researchers.

We fully expect that arising from this tutorial will be an interested cohort of researchers who will continue to converse and explore this new – and fast growing – space. Indeed, summaries of the conversations will be developed and issued as a white paper so that others, not in attendance, might still share in the conversations.

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