

Better Groups: Combining a web-based tool with teamwork strategies to foster active

learning in group work

Andrew D Reynolds

UNCC School of Social Work

November 1, 2016

### **Abstract**

While instructors turn to extended group work assignments to promote active learning in their courses, it can be difficult for instructors to manage this group work effectively. Instructors often encounter challenges when organizing and scaffolding group work activities, promoting the social and emotional skills required for effective group work, and including student voices and opinions on logistical matters such as choosing a topic or finding a mutually available meeting time. The purpose of this project is to evaluate the use of this tool used in conjunction with intentional and focused group-work teaching strategies in the context of project-based assignments in social work education settings. To date, the primary investigator has developed a working prototype of a tool (see [bettergroups.org](http://bettergroups.org) for a description), which uses student's voice, availability, and skills to assign students to optimal groups. The current SOTL project would combine the use of this group-assignment prototype tool with other non-web based strategies for enhancing group work, including 1) structured group teambuilding activities (teambuilding), 2) structuring both individual and group assignments within the overall project group (accountability), and 3) formative and summative assessment (evaluation). It is hypothesized that students who participate in courses that use this pedagogical approach will report increased skills for group work as compared to other classes in which they have participated in group work activities. The research generated from this project - as well as the web application itself - will be made available to UNCC and the broader public.

## Budget Request for SOTL Grant Year 2017-2018

Joint Proposal?        Yes   X   No  
 Title of Project Better Groups: Combining a web-based tool with teamwork strategies to foster active learning in group work

Duration of Project January 2017 to May 2018

Primary Investigator(s) Andrew D Reynolds

Email Address(es) areyno42@uncc.edu

UNC Charlotte SOTL Grants Previously Received (please names of project, PIs, and dates) NA

Allocate operating budget to Department of Social Work

Account #	Award	Year One January to June
Faculty Stipend	Transferred directly from Academic Affairs to Grantee on May 15	\$ 3,850
911250	Graduate Student Salaries	
911300	Special Pay (Faculty on UNCC payroll other than Grantee)	
915000	Student Temporary Wages	
915900	Non-student Temporary Wages	
920000	Honorarium (Individual(s) not with UNCC)	
921150	Participant Stipends	
925000	Travel - Domestic	
926000	Travel - Foreign	
928000	Communication and/or Printing	
930000	Supplies	
942000	Computing Equipment	
944000	Educational Equipment	
951000	Other Current Services	
<b>GRAND TOTAL</b>		<b>\$ 3,850</b>

<b>Account #</b>	<b>Award</b>	<b>Year Two July to June</b>
Faculty Stipend	Transferred directly from Academic Affairs to Grantee on May 15	\$ -
911250	Graduate Student Salaries	\$2,400
911300	Special Pay (Faculty on UNCC payroll other than Grantee)	
915000	Student Temporary Wages	
915900	Non-student Temporary Wages	
920000	Honorarium (Individual(s) not with UNCC)	
921150	Participant Stipends	\$1,000
925000	Travel - Domestic	\$3,000
926000	Travel - Foreign	
928000	Communication and/or Printing	
930000	Supplies	
942000	Computing Equipment	
944000	Educational Equipment	
951000	Other Current Services	
<b>GRAND TOTAL</b>		\$6,400

**Attachments:**

1. Attach/provide a narrative that explains how the funds requested will be used.
2. Has funding for the project been requested from other sources?  Yes  
 No. If yes, list sources.

### Budget Narrative

Three line items have been requested to support this SOTL project.

1. Faculty Stipend – 3,850

The faculty stipend will be used to support my work over the summer of 2017 to conduct the evaluation and writing associated with the new pedagogical approach I intend to take.

2. Graduate Student Stipend - \$2,400

A graduate student stipend of \$15/hr for 5 hours – a total of \$1,200 per semester - will provide financial support for a graduate assistant during the 2017-2018 academic year to help implement the evaluation of the SOTL project.

3. Travel – Domestic - \$3,000

Travel funds will be used to fund faculty travel for dissemination of research. These funds will be used to cover expenses associated travel to two events:

A. *Fall 2017 Council for Social Work Education Conference*: The initial findings of the first semester of research will be compiled and presented to other social work faculty interested in using group work strategies to enhance research and program evaluation courses.

B. *Spring 2018 Boston College CTE Excellence in Teaching Day*: The findings from all three semesters will be presented at the Boston College Center for Teaching Excellence Day. The purpose of presenting to faculty at Boston College is because one of the collaborators in the development of the Better Groups web application is also doing a separate independent evaluation of the tool at Boston College, with whom I intend to collaborate on a presentation.

4. Participant Incentives - \$1,000

The sample of student participants includes five sections of twenty students each over three semesters, for a total of 100 students. For their participation in the midterm and final evaluations, each student will receive a \$10 gift card to amazon.com as an incentive for their participation.

### **Additional Funding Sources**

Two existing grants have been used to develop and conduct initial evaluation on the group assignment prototype tool, Better Groups:

- A. A \$10,000 proposal, “[Optimizing Groups for Active Learning](#)”, was awarded by Canvas Instructure as a part of the 2015 Canvas Grants Program. This proposal funded the development of the Better Groups group formation tool prototype, which was developed while I worked as an instructional designer at the Center for Teaching Excellence at Boston College. No funds from this project will be used to conduct the evaluation associated with the SOTL project based at UNC Charlotte.
- B. A proposal, “[Action learning for research: Building groups to bridge research and practice](#)”, was funded by the Academic Technology Innovation Grant program at Boston College to Thomas Crea, PhD, associate professor at the Boston College School of Social Work. While funds remain from this proposal to continue development of the group assignment tool prototype, the funds of this project will not be used to conduct the evaluation associated with the SOTL project based at UNC Charlotte.



**UNC CHARLOTTE**  
College of Health and Human Services  
**School of Social Work**

October 31, 2016

Scholarship of Teaching and Learning Grants Committee  
Center for Teaching and Learning  
UNC Charlotte  
9201 University Boulevard  
Charlotte, NC 28223

Dear SOTL Grants Committee:

It is my pleasure to write a letter of support for the 2016 SOTL grant proposal, "Better Groups: A web-based tool for fostering active learning in group work", submitted by Dr. Andrew Reynolds. This project will involve the development and evaluation of a web-based application that will help instructors navigate the challenges of organizing and managing extended group work projects in academic settings.

Many of our courses in social work employ the use of extended group projects – for example, students might conduct a program evaluation of a social service program, conduct a needs assessment for a community organization, or develop policy proposals to address social problems. These types of projects require extensive support from faculty members who need to help students engage in organization and project management skills, develop social and emotional capacities to work well with others, and acquire skills to work across difference in multicultural settings. Educating our students with these skills is not only essential for student coursework, but also for their future work as social work practitioners committed to and engaged in communities working to reduce social problems and advance social justice. Dr. Reynolds proposes to build a web-based application that will help advance these pedagogical goals in the social work classroom.

I anticipate a number of benefits that this project could bring to our school. First, Dr. Reynolds is a current member of our MSW program Committee, and I believe his work on this project will contribute to ongoing conversations among faculty colleagues about how best to prepare students for working in collaborative settings. Second, as our school explores opportunities for providing more distance education offerings for our degree programs, having access to such a tool could help our instructors facilitate extended group projects in hybrid or fully online courses more effectively. Third, because the project involves the creation of a public facing web-based application, the impact of this tool could extend well beyond our school to reach faculty across the university as well as our national network of social work educators – if not higher education instructors more broadly.

The proposed project will also further the research that Dr. Reynolds has already started in this area. He is currently working on one peer-reviewed manuscript, "The development of an instrument to measure group collaboration, interdependence, and resilience", a study developed alongside his work in creating the initial prototype of the tool. Dr. Reynolds also conducts research in the area of social and emotional learning, and anticipates that work on this project could inform future intervention efforts at the K-12 level to help students across different developmental stages acquire the skills they need to identify and manage their emotions, work collaboratively with others, develop empathy, and make responsible decisions.

I am confident that this project will advance the mission of our school and I offer my full support of it. Thank you for the consideration.

Sincerely,

A handwritten signature in black ink that reads "Schnavia Smith Hatcher". The signature is written in a cursive style with a large initial 'S'.

Schnavia Smith Hatcher  
Director, School of Social Work



## Project Narrative (word count 2,466)

### 1. Specific Aims

**Overall Purpose.** Previous research indicates that active learning leads to improved student outcomes (Carlson & Winiquist, 2011; Hoellwarth & Moelter, 2011; Roehl, Reddy, & Shannon, 2013; Smith & Cardaciotto, 2011) – and many instructors used team-based and group work approaches to promote active learning in their teaching. Nevertheless, a number of challenges plague the effectiveness of group work to promote positive learning outcomes, including challenging interpersonal dynamics and processes for handling conflict (Pelled, Eisenhardt, & Xin, 1999) existing social relationships and friendship networks (Cummings & Cross, 2003; Yang & Tang, 2004) and social loafing (Aggarwal & O’Brien, 2008). Even factors like finding a time to meet may prevent groups from being able to work efficiently to achieve learning outcomes (Layton, Loughry, Ohland, & Ricco, 2010).

The project “Better Groups: Combining a web-based tool with teamwork strategies to foster active learning in group work” proposes a set of pedagogical practices to reduce these challenges and to instead enhance learning in extended group projects. These pedagogical practices include:

- A. **Optimal group assignment** through the use of a group-assignment prototype tool called Better Groups (for a description, see [bettergroups.org](http://bettergroups.org)) to assign students to optimal groups for student learning;
- B. **Structured group teambuilding activities**, including the development of group policies, identifying and delegating interdependent tasks, developing project plans and project management skills, and teaching skills specific to group work processes;

- C. **Structured individual and group assignments** that require both individual students as well as the entire group to be held accountable for learning; and
- D. **Formative and summative assessment**, including both a mid-term and final mixed-methods evaluation of how students rate their experience working in groups

*Specific Objectives.* The inclusion of these four practices is purposefully directed to achieve learning goal outcomes as indicated by the course syllabi. However, the primary goal of this SOTL project is to also develop student's abilities to work in group settings. Three learning goals – linked to specific skills in group work – are identified as objectives of this project:

A. *Learning Goal #1: Group Collaboration Skills*

Students will be able to collaborate well with others when working in group projects, which includes developing skills to ensure all members are included equally in decisions and demonstrating honest communication.

B. *Learning Goal #2: Group Interdependence Skills*

Students will be able to depend upon others in their group, and to recognize that the success of the group is tied directly to their own contributions. Such skills encourage the deep collaboration and reliance on others that is required for effective group work functioning.

C. *Learning Goal #3: Group Resilience Skills*

Students will be able to respond to adversity in group work settings with resilience, allowing them to overcome the many challenges that will arise and interfere with the smooth functioning of the group. Such skills also involve a willingness to take on new tasks even if it means risking failure.

***Specific Research Questions.*** This project is guided by one primary research question: To what extent does using the Better Groups tool accompanied by structured group teambuilding activities, structured individual and group assignments, and formative and summative assessment techniques as a pedagogical intervention to support academic group work improve the development of skills related to collaboration, interdependence, and resilience in group work? It is hypothesized that students who participate in courses that use this pedagogical approach will report increased skills for group work as compared to other classes in which they have participated in extended group work activities.

***Project Rationale.*** Many social work courses – particularly those teaching program evaluation, research methods, and advanced policy analysis courses – use group work as a means to structure extended group projects in which students are asked to evaluate a social program, develop a research study, or analyze a complex social policy. These group projects often comprise of a series of smaller assignments over the course of a semester and culminate into a large end of the year project in which students present their work through in-class presentations, poster sessions, and formal papers. Group work is often used in these circumstances because these projects are seen as too complex for individual students to take on alone, and that students would mutually benefit through processes of peer learning in structured group activities (Gillespie, 2012). However, group work in these courses – as in all courses in higher education – often encounter challenges (Aggarwal & O’Brien, 2008; Pelled et al., 1999). New strategies are needed to ensure that group work approaches in social work education can effectively enable students to achieve desired learning outcomes.

This SOTL proposal will add to existing research on group dynamics by combining four separate strategies for group work: optimal group assignment, structured group teambuilding

activities, structured individual and group assignments, and formative and summative assessment. While the latter three approaches will use existing teaching resources, what is perhaps most unique about this approach is the use of a newly-developed tool for group assignment called Better Groups, which incorporates student voice, availability, and skills in forming groups.

The development of Better Groups began as a project at the Boston College Center for Teaching Excellence in February of 2015, with initial grant support from Canvas Instructure. By June of 2016, an initial proof-of-concept prototype was built and is ready for use in classrooms. This SOTL project would provide me the first opportunity to evaluate the use of the tool in my own teaching as a faculty member at UNCC.

This SOTL proposal would also help advance the mission of both the School of Social work and the university in three ways. First, roughly 100 students in five courses will be directly exposed to the new teaching approach to group work. These students may benefit in developing increased skills in group collaboration, interdependence, and resilience in addition to achieving stated course learning objectives. Second, the results of the project would contribute to the scholarship on using group work in social work education settings. The results of this evaluation will help inform current efforts to serve social work students in courses with extended group assignments, and may even generate discussion on how to facilitate such projects online. Finally, the evaluation of the Better Groups tool and the dissemination of the results would help to spread the word about the tool and encourage others – both within UNCC and in the broader higher education community – to consider using these pedagogical approaches in their own classes.

## **2. Literature Review**

**Group work.** The documented effectiveness of group and team strategies in teaching (Sisk, 2011) as well as active learning strategies (Freeman et al., 2014) have led many instructors to turn to group work. However, it can be challenging to ensure that all students are learning, that all students are accountable, and that all students are given equal opportunities to participate in their groups. Group dynamics, ranging from the challenges of negotiating cultural differences across race, gender, and class to negotiating differences in personality and communication styles can stymie projects that would otherwise be successful learning experiences (Pelled et al., 1999). Some teaching practices have focused on how groups are formed (Ciubuc, Dascalu, Trausan-Matu, & Marhan, 2013; Jensen, Feland, Bowe, & Self, 2000) and have even created tools to form and assess groups (e.g. CATME) (Layton et al., 2010). Other teaching practices have focused more on the process of what goes on in the classroom and specify specific teaching practices that help structure group work to meet a specific end (Freeman et al., 2014; Gillespie, 2012; Sisk, 2011). Currently, there are few documented examples of instructors in social work or higher education more broadly who have used a combination of these strategies to support group work in their own teaching.

**Group assignment.** Better Groups differs from existing group assignment and assessment tools in important ways. First, Better Groups uses a unique algorithm that includes student voice, availability, and skills in forming groups. Previous approaches have focused on fixed attributes like personality traits (Ciubuc et al., 2013) or demographic attributes (Layton et al., 2010) – yet these approaches may suffer from using fixed attributes which could encourage students to see their group work abilities as fixed rather than malleable – in other words, encouraging a fixed mindset to one’s skills in group work rather than promoting a growth-mindset (Dweck, 2008). Better Groups uses a new instrument that focuses on skills growth and

assesses the ability of students to engage in collaboration, participate in interdependence, and respond to challenges with resilience in group settings. Second, previous approaches have not taken into consideration student's own voice in determining their group composition. Better Groups uses complex social network analysis techniques to – while taking into consideration other factors – preference forming groups among friends and friends of friends. While currently untested, I hypothesize that the latter of these two – being paired in a group with one's friends' friends – creates a social bond or closure (Burt, Kilduff, & Tasselli, 2013; Coleman, 1988) that encourages prosocial action because individuals would want to be seen as working with others in their extended social networks. Finally, Better Groups includes a method that accounts for students' schedules to the aforementioned group assignments strategies to prioritize forming groups that have available meeting times.

### **3. Methods**

The research design method employed in this project is a mixed-methods pre-post test which will quantitatively measure student's improvement in group collaboration, interdependence, and resilience as well as gather qualitative feedback on the students' responses to the structured group teambuilding activities, the structured individual and group assignments, and the formative and summative assessments. The use of the pre-post test design will be able to capture student growth in the skill areas over time and provide input as to how they found the various pedagogical strategies used over the course of the semester helpful in their learning. Though this methodological approach will not be able to determine the overall effectiveness of using these strategies as compared to other approaches (there is no control group or counterfactual with which to compare the results) it will provide initial evidence that can build to more rigorous studies that employ randomization and larger samples to better address the

question of effectiveness. The study sample includes 100 students, distributed across five courses in three academic semesters, all of whom are students in the Program Evaluation and Foundations of Social Welfare courses I will be teaching.

#### **4. Evaluation**

The primary method of evaluation will be an assessment of the defined SOTL proposal objectives at the beginning and end of each course. At the beginning, students are invited to use the Better Groups tool to provide information about their skills in group work, who they want to work with, and what their schedule availability is for the current semester. The baseline measure of group skills – including group collaboration, interdependence, and resilience – will then be compared to the final assessment at the end of the semester to see whether or not students who participated in the class report growth in group work skills. Examples of measure items include “When I have concerns, I am open and honest with my group” and “I cannot accomplish my portion of the assignment without information or materials from my group members”, with students responding according to a Likert scale (Strongly agree, agree, disagree, strongly disagree). Students will also be invited to share qualitative responses which ask for their feedback on teambuilding exercises used in class to support group activities and to report on the degree to which (and how) their experience in group work in the course differed from their experience in other courses that have involved extended group projects.

#### **5. Knowledge Dissemination**

Knowledge dissemination will occur through three primary mechanisms. First, I would be interested in offering professional development seminars or workshops held through the UNCC CTL to discuss strategies for approaching group work in teaching, and intend to offer a similar presentation at the Boston College Center for Teaching Excellence (see budget line item

for travel). I will also submit a conference presentation proposal to Annual Program Meeting of the Council of Social Work Education in 2017, and intend to prepare two manuscripts: one describing the details of pedagogical strategy outlined in this proposal (target journal: *Journal of Social Work Education*) as well as a second tool describing in detail the group assignment tool prototype, including the advanced algorithm that sorts students into groups (target journal: *Active Learning in Higher Education*). Finally, I intend to share information about the project through blogs and websites including [bettergroups.org](http://bettergroups.org).

## 6. Human Subjects

This proposal will require IRB approval from the UNC Charlotte IRB, which will be submitted in Winter 2016 with an anticipated evaluation timeline of January/February 2017 to May 2018. While it is anticipated that risk to subjects is minimal, there may be some social anxiety that students face when electing with whom they wish to work each semester, resulting in potential ethical challenges (Borgatti & Molina, 2005; Klovdahl, 2005). It is anticipated that this proposal will be classified as exempt.

## 7. Extramural funding

Two sources of extramural funding have already been used to support the construction of the original prototype. First, a \$10,000 grant [was awarded from Canvas Instructure](#)<sup>1</sup> to develop the grouping algorithm in the original prototype. Second, Dr. Thomas Crea, associate professor at Boston College and my colleague, [has obtained additional internal funding](#)<sup>2</sup> to support the use of the tool in promoting action learning his social work program evaluation courses, the potential LTI development to foster integration of the tool with Canvas, and future evaluation work.

Please note that this SOTL grant proposal is strictly for evaluation of the use of particular

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<sup>1</sup> Canvas Grants (2015) <https://www.canvaslms.com/canvasgrants/>

<sup>2</sup> Action Learning for Research (2015) [http://www.bc.edu/offices/atab/projects/action\\_learning\\_for\\_research.html](http://www.bc.edu/offices/atab/projects/action_learning_for_research.html)



pedagogical strategies in the classroom, and not for web development. Other sources of funding have been and will be used for the ongoing web development of the Better Groups tool.

## 8. Timeline

Name	Date	Description
Submit SOTL Grant application	Nov 1, 2016	
Spring 2017 Preparation	Nov-Dec 2016	Prepare group work pedagogical strategies for initial implementation in one Spring 2017 course
Assign Groups	January 2017	Assign groups using the Better Groups tool
Implement pedagogical strategies	Spring 2017	
Midterm evaluation	March 2017	
Abstract submission	March 2017	Submit abstract to CSWE conference
Final evaluation	May 2017	Send out survey using Qualtrics
Research	June-Aug 2017	Prepare presentation with initial findings for CSWE conference, begin stages of manuscript preparation for summative findings
Implement pedagogical strategies	Fall 2017	
Midterm evaluation	October 2017	
BC CTE Contact	October 2017	Reach out to BC CTE to make arrangements for workshop at annual Excellence in Teaching Day event
Final evaluation	December 2017	Send out survey using Qualtrics
Implement pedagogical strategies	Spring 2018	
Midterm evaluation	March 2018	
Final evaluation	May 2018	Send out survey using Qualtrics
Prepare manuscripts for dissemination	June 2018	Target journals: <i>Active Learning in Higher Education</i> , <i>Journal of Social Work Education</i>

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