

Northwest Ohio Symposium on Science, Technology, Engineering, and Mathematics Teaching

2015 Evaluation Report

December 2015

The Northwest Ohio Symposium on Science, Technology, Engineering, and Mathematics Teaching (NWO Symposium) is a regional conference held by the Northwest Ohio Center for Excellence in STEM Education (NWO) for STEM educators in northwest Ohio. The 12th annual NWO Symposium was held on November 21, 2015 at Bowling Green State University. The Symposium began at 7:30 A.M. and concluded at 3:40 P.M. Vendors were not included this year for several reasons including, the limits on space available at the venue, the success of acquiring vendors in the past, and the overall benefit of the vendors to the success of the Symposium.

This report summarizes the following information:

- Event attendance
- Event activities
- Analysis of the attendee perceptions of the event
- Analysis of the presenter perceptions of the event
- Recommendations for next year

Event Attendance

A total of 425 participants (attendees, presenters and staff) attended the 2015 NWO Symposium. The table below displays a detailed summary of the attendance at the 2015 NWO Symposium as well the attendance numbers from the previous four NWO Symposia.

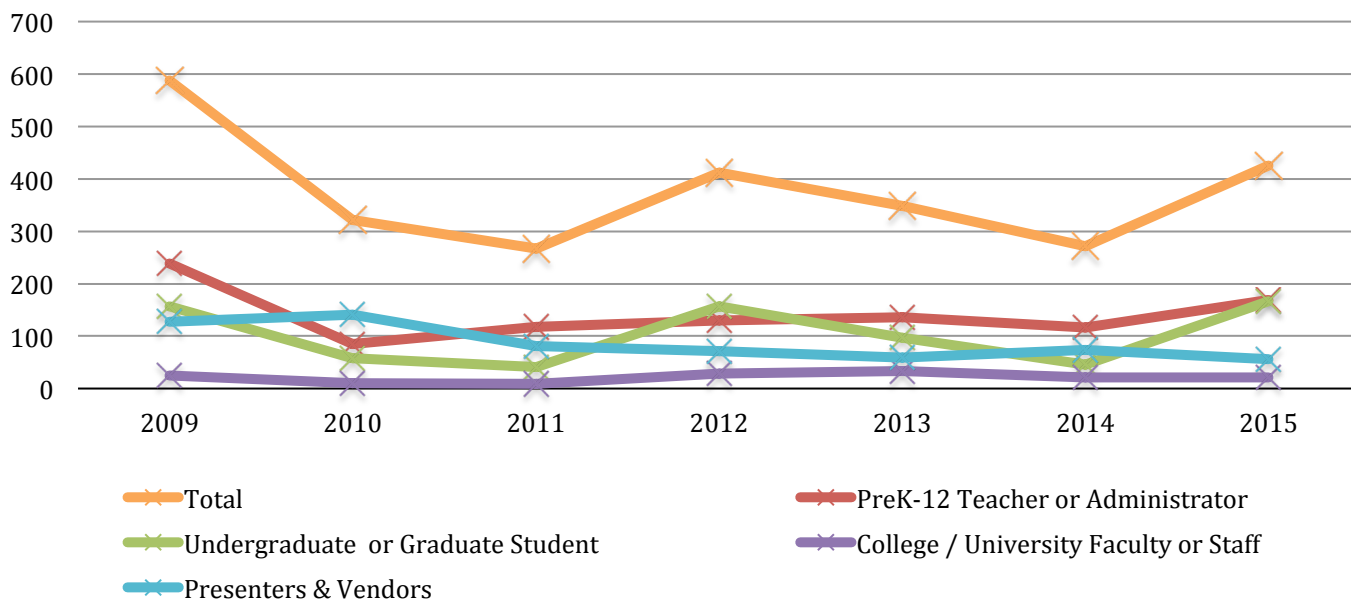
Participants	2011	2012	2013	2014	2015
Attendees					
PreK-12 Teacher	118	130	136	117	166
Undergraduate or Graduate Student	41	157	97	46	166
College / University Faculty or Staff	9	28	33	21	21
PreK-12 Administrator	2	2	5	1	3
Other	4	2	11	1	6
Presenters & Vendors	81	71	59	74	56*
NWO Staff & Volunteers	12	22	7	12	7
TOTAL	267	412	348	272	425

** Vendors were not included in the 2015 Symposium*

The total attendance at the 2015 NWO Symposium was significantly higher than the attendance at the 2014 Symposium. In fact, attendance was the highest it has been in five years, surpassing the previous record high from 2012.

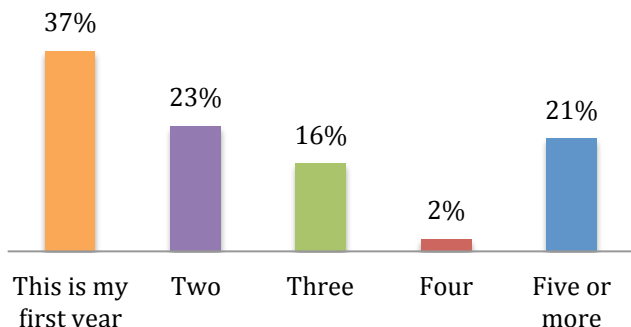
Attendance at the NWO Symposium has fluctuated heavily since 2010, when registration fees were first put in place. The figure below illustrates the trends in attendance for PreK-12 and pre-service teachers, higher education faculty, presenters/vendors, as well as for overall attendees. According to the figure, the strongest parallel to total attendance has been pre-service attendance; the two lines mirror each other almost perfectly. When total attendance was high in 2012, pre-service teachers made up 50% of the attendee population. This year, pre-service teachers made up 40% of the attendee population. All other attendance categories have been mostly stable since the initial drop in attendance in 2010. NWO staff should consider the desired percentage of attendees from each category, and direct their recruiting efforts accordingly.

NWO Symposium Attendance from 2009 - 2015

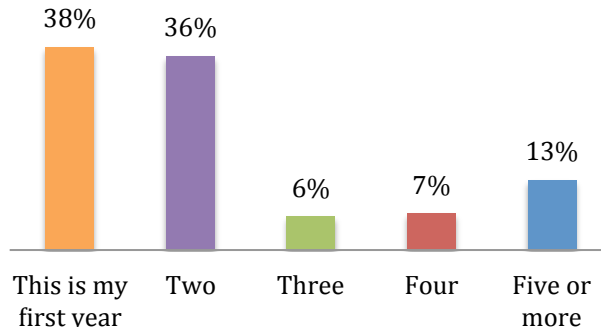


Most of the attendees at the 2015 Symposium were attending the Symposium for the first or second time. Over half of the presenters (who completed the evaluation survey) were also participating for the first or second time in 2015. The charts below detail the self-reported data from the attendees and presenters who completed the online post evaluation survey and answered the question regarding their past participation.

Presenter Self-Report Data of Participation Over Time (n=43)

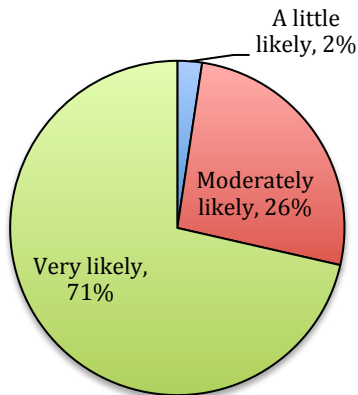


Attendee Self-Report Data of Attendance Over Time (n=177)

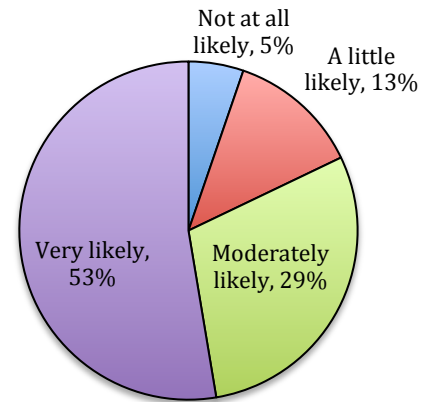


Additionally, the majority of attendees (who completed the online evaluation survey) said they were “very likely” or moderately likely” to participate in future symposia. 71% of the presenters (who completed the online evaluation survey) said that they were “very likely” to present at future symposia with no one stating it would be “not at all likely”.

Presenter Self-Report Data on the Likelihood of Future Participation (n=42)



Attendee Self-Report Data on the Likelihood of Future Attendance (n=190)



Most attendees reported learning about the Symposium by e-mail (36%), down from 60% in 2014. Another significant portion (19%) of attendees learned about the Symposium from a university professor/instructor or friend/colleague. The table below shows the percentage of attendees who reported learning about the Symposium by each of the nine methods listed on the survey. Attendees were able to select all the ways they heard about the symposium.

Method	Percentage of Participants (n=268)
E-mail message from NWO/COSMOS	36% (97)
University professor/instructor	19% (52)
A friend or colleague	19% (51)
Postcard	8% (21)
NWO newsletter	7% (20)
COMP or CAMP Grant	4% (12)
Flyer	3% (7)
Ohio STEM Learning Network (OSLN) website	2% (5)
Black Swamp Math Teacher Circle	1% (3)

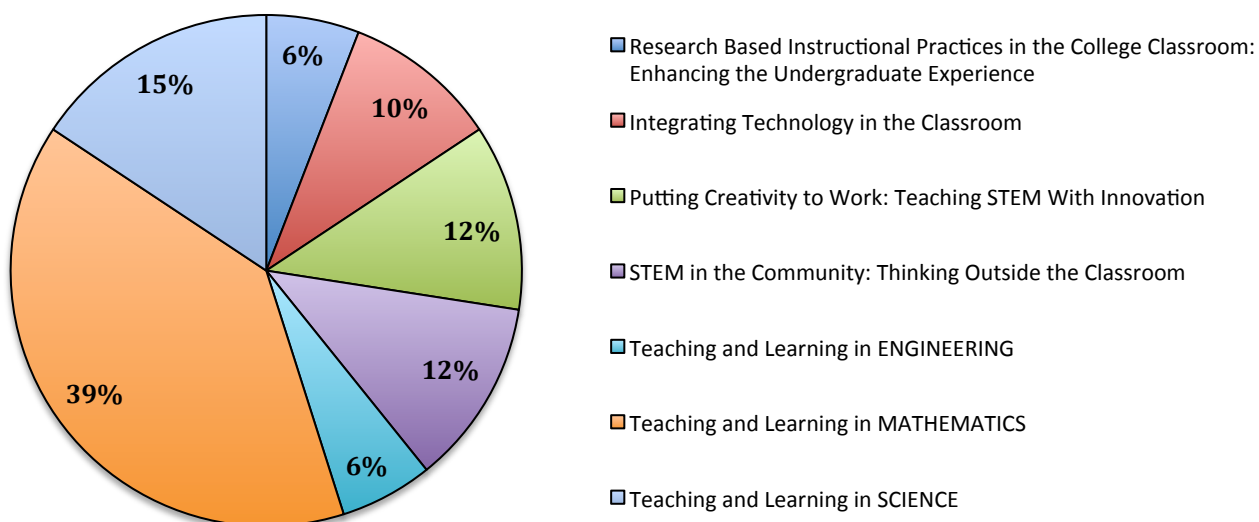
Event Activities

The 2015 NWO Symposium began with a keynote address from BGSU Professor of Teaching Excellence Dr. Daniel Brahier titled: "Science and Mathematics for a New Generation", and continued with five one-hour blocks of seven different content strands. The 2015 Symposium was sponsored in part by The Andersons. The schedule for the day is below.

7:30 AM – 8:30 AM	Registration (Outside Olscamp Hall: Room 101)
8:00 AM – 9:45 AM	Breakfast (Olscamp Hall: Room 101)
8:30 AM – 9:45 AM	Welcome and Keynote Address
10:00AM – 10:50 AM	Block A
11:00 AM – 11:50 AM	Block B
11:50 AM – 12:40 PM	Lunch
12:50 PM – 1:40 PM	Block C
1:50 PM – 2:40 PM	Block D
2:50 PM – 3:40 PM	Block E

A total of 51 sessions were offered at the 2015 Symposium after two sessions were cancelled the week of the event due to presenter emergencies. Additionally, on the day of the Symposium, two similar sessions from the CAMP grant combined into one session to maximize attendance for the two presentations with the presenters sharing the time. The chart below shows the breakdown of sessions by strand. Most sessions (39%) were in the strand "Teaching and Learning in Mathematics". The higher number of sessions in this strand is due to the number of sessions provided by the COMP and CAMP mathematics grant participants and the focus by NWO staff to recruit mathematics presentations to accompany the keynote from Dr. Brahier that had a heavy mathematics focus. Of the sessions offered, only five were "double sessions", meaning they lasted for two hours instead of one. This is a 50% reduction of double sessions from the previous year and due in part to the number of presentation proposals received in 2015, the goal to accept as many presenters as possible and the recommendation from the 2014 Symposium evaluation report. A full list of sessions is available in the 2015 NWO Symposium program which can be found on the NWO website.

NWO Symposium Sessions by Strand (n=51)



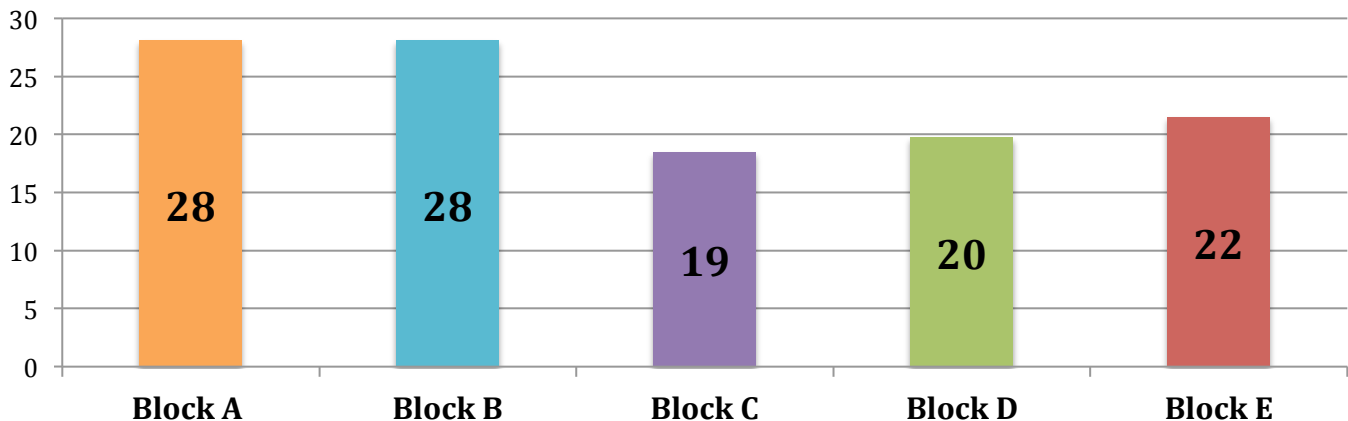
Evaluation of the 2015 NWO Symposium

The purposes of the evaluation was to: (1) determine the quality and impact of the NWO Symposium, primarily indicated by the participants' perceptions regarding the value and usefulness of the Symposium, (2) document changes made to the 2015 event, and determine the impact of those changes on the quality of the NWO Symposium, and (3) identify ways in which future NWO Symposia might be improved. These purposes were accomplished by analyzing data from the paper session evaluation surveys, the online attendee evaluation survey, and the online presenter evaluation survey. The response rates were 54% for the online attendee survey and 77% for the online presenter survey. In total 692 session evaluation forms were collected. Presenters were sent an individual summary of their session evaluation data in December 2015.

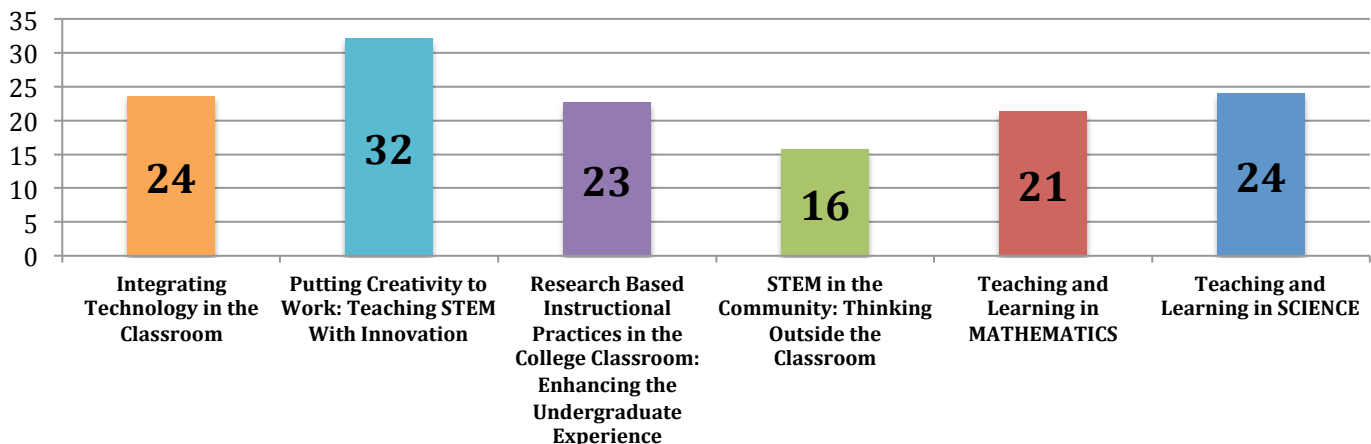
Session Attendance at the 2015 Symposium

In an effort to increase attendance at all sessions, fewer sessions were offered during each block of the day. Historically, attendance in the last block of the day has been very low as attendees leave early from the symposium. With this in mind, NWO staff significantly reduced the sessions offered in block E to only 8. Below are charts detailing the average attendance per session in each block of the day as well as by session strand throughout the day.

Average Attendance Per Session in Each Block



Average Attendance Per Session in Each Strand



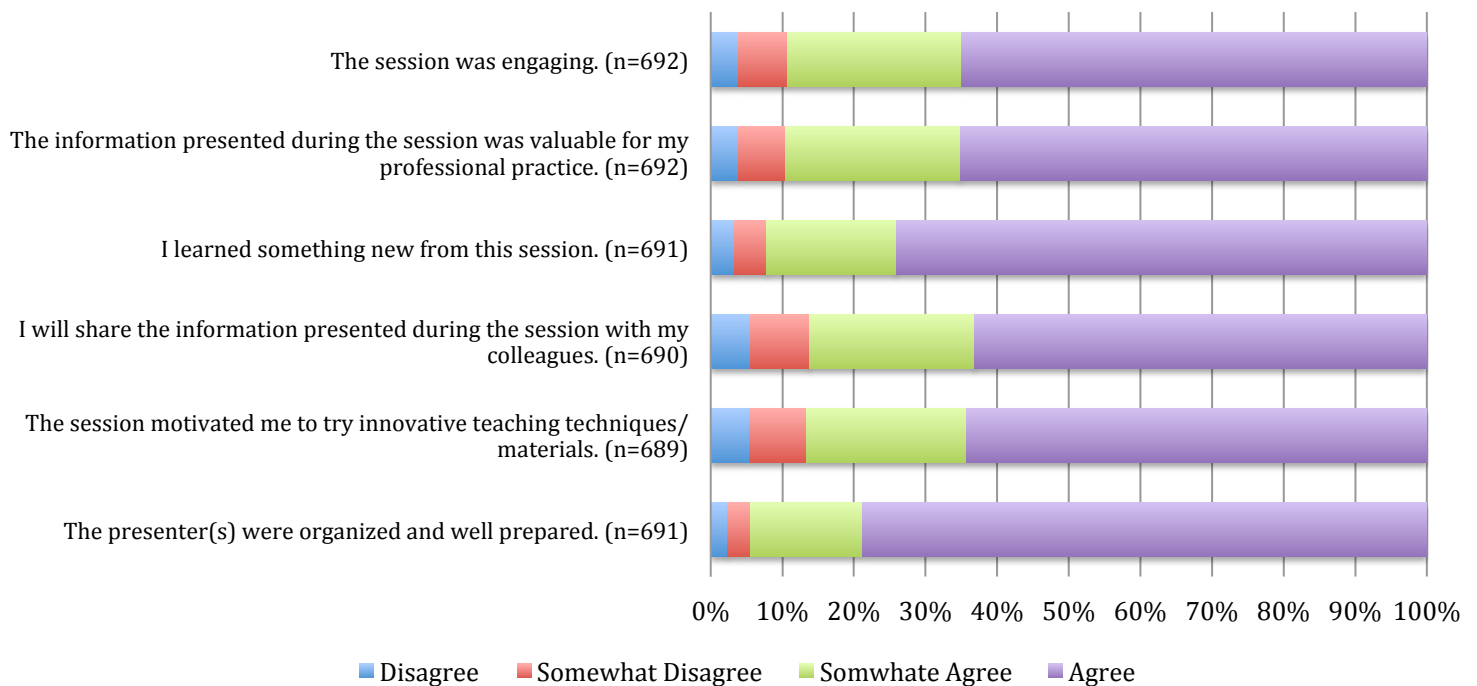
Attendees' Perceptions of the 2015 NWO Symposium Sessions

Overall, the responses on the session evaluation surveys indicated that attendees perceived the sessions to be engaging and valuable. The table below shows the average score for each item on the survey when all of the sessions are taken together. The chart below provides a visual the overall attendee perceptions of the symposium when all of the sessions are taken together. In total 692 session evaluation forms were collected from attendees.

Survey Item	Average Score (from 51 sessions)
The session was engaging.	3.50
The information presented during the session was valuable for my professional practice.	3.51
I learned something new from this session.	3.63
I will share the information presented during the session with my colleagues.	3.44
The session motivated me to try innovative teaching techniques/materials.	3.46
The presenter(s) were organized and well prepared.	3.71
TOTAL	3.54

Note: 1 = Disagree, 2 = Somewhat Disagree, 3 = Somewhat Agree, 4 = Agree

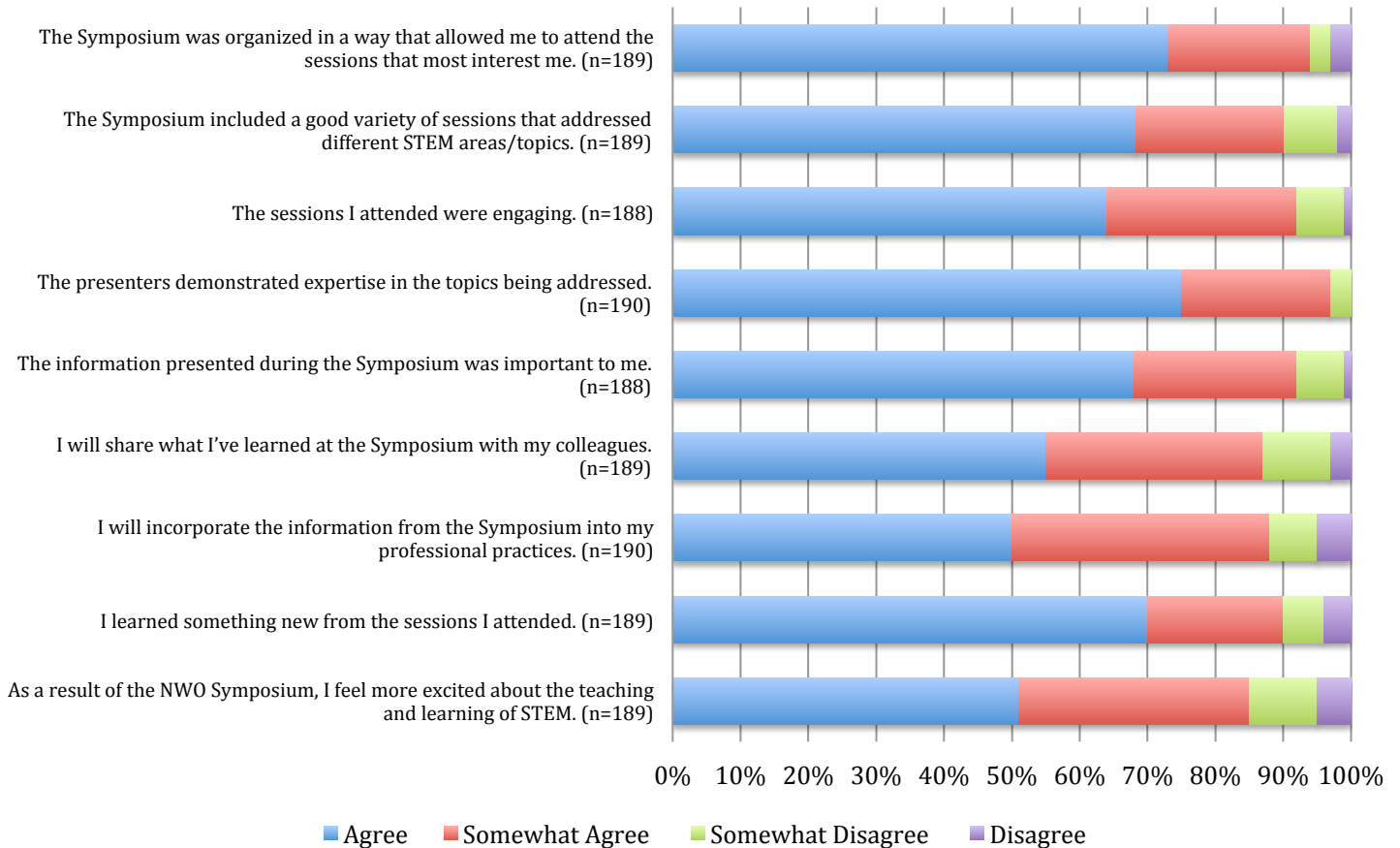
Participants Perceptions of the NWO Symposium Sessions Overall



Attendees' Perceptions of the 2015 NWO Symposium Overall

The online attendee evaluation survey was available to participants starting at the end of the Symposium and remained open for a little over two weeks with several reminders sent to the participants requesting that they complete the survey. In total 196 of the possible 362 attendees completed the online survey, a response rate of 54%. The responses to the online evaluation survey indicated that the attendees perceived the 2015 NWO Symposium to be a high-quality professional development experience. The chart below shows the responses to some of the items on the survey.

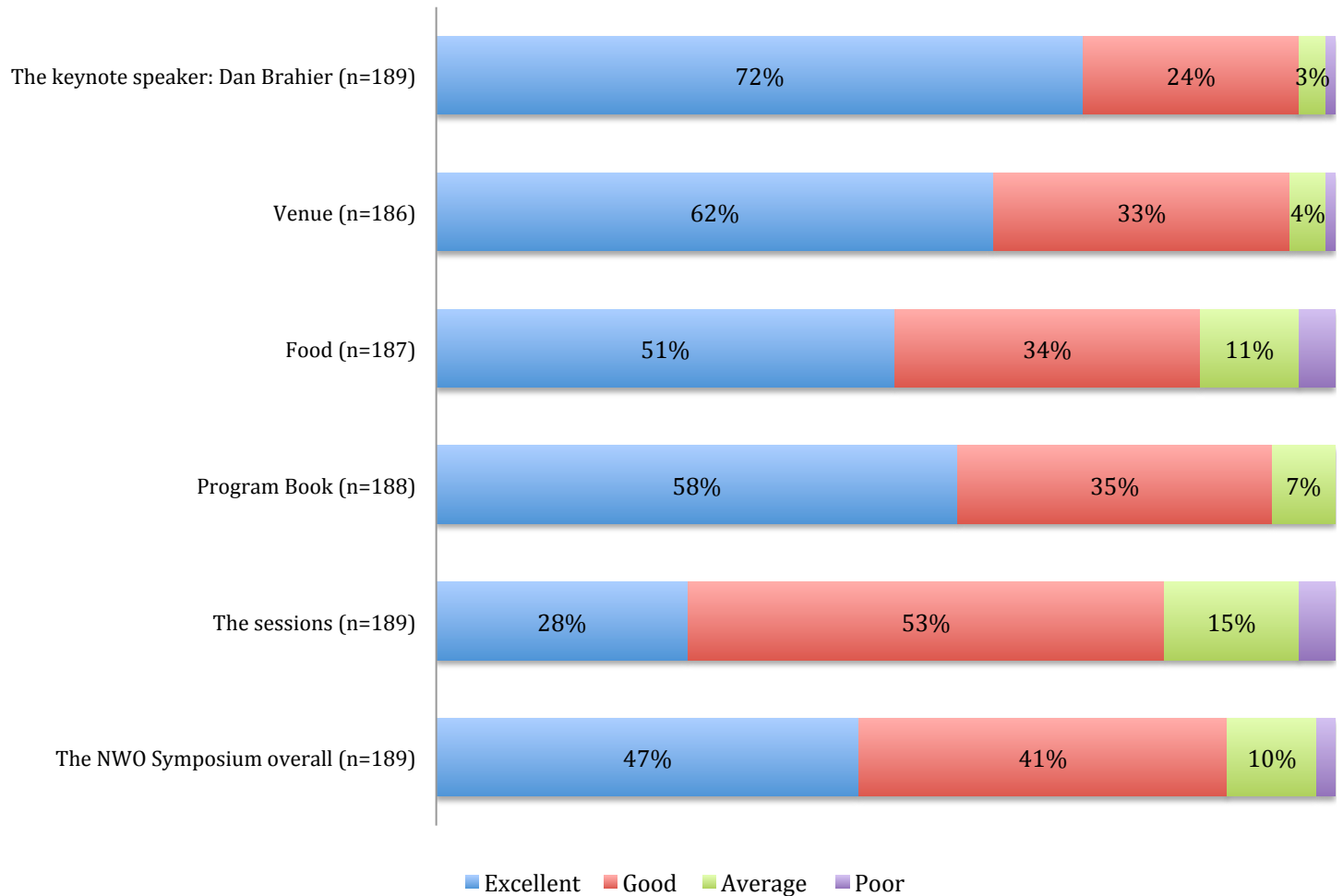
Attendees' Perceptions of the Benefits of the 2015 Symposium



Several comments from attendees on the survey were that they were hoping for more cross-curricular sessions that combined two or more STEM areas. Some attendees noted the high amount of mathematics sessions but felt that there needed to be more science sessions. This may be a result of the concentrated effort to recruit mathematics sessions this year as well as a lot of the 'science' themed sessions being placed in different strands.

Attendees also ranked several factors of the Symposium, including the program book, food, venue, and the NWO Symposium overall. The responses to these items are shown below. In general, ratings for the 2015 Symposium were similar to previous years. The keynote was rated the same as last year, and food ratings were slightly reduced from previous years.

Attendees' Perceptions of Several Aspects of the 2015 Symposium



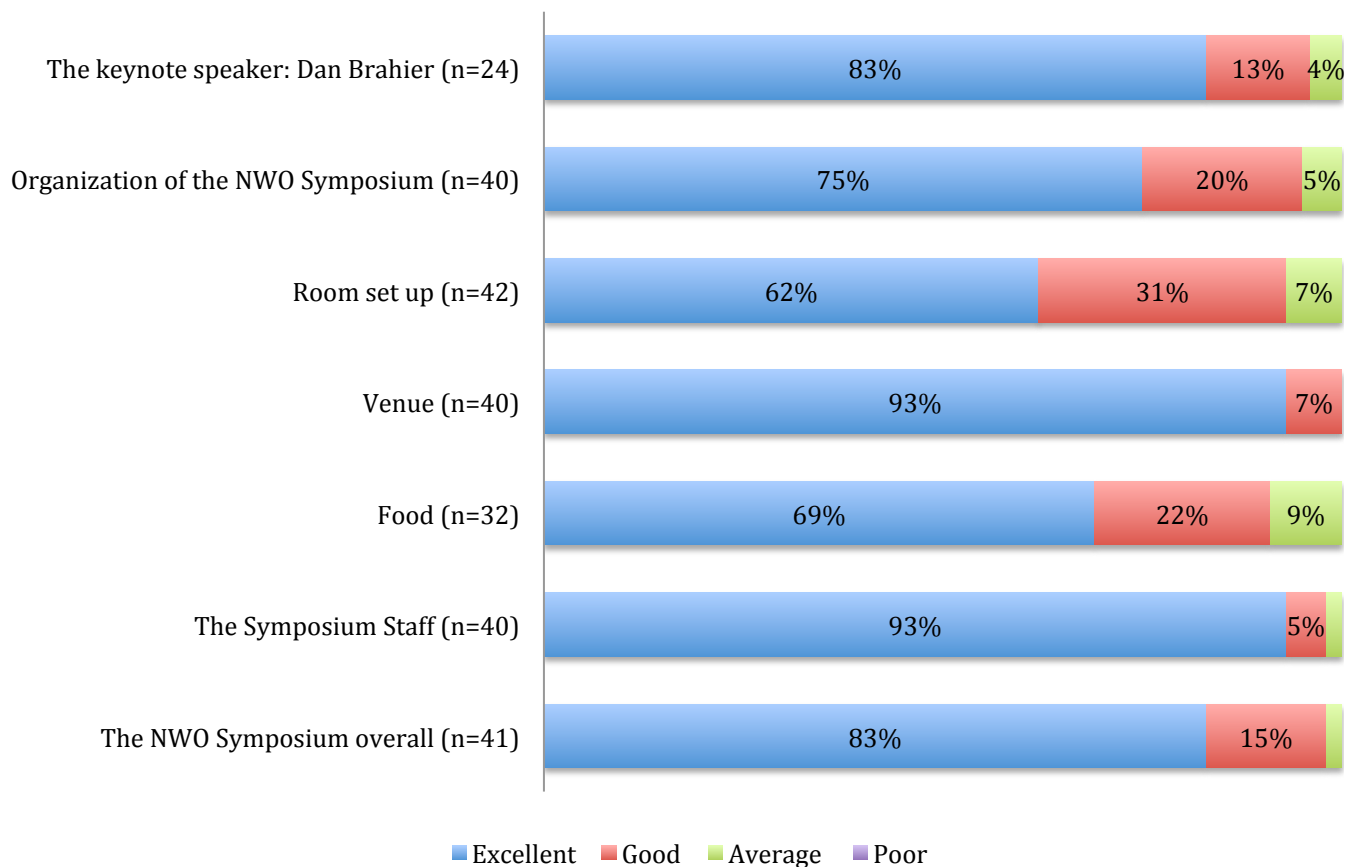
Presenter Perceptions of the 2015 NWO Symposium Overall

In total, 43 of the possible 56 presenters and co-presenters responded to the online evaluation survey. Most of the participants reported that their participation was either definitely (88%) or moderately (12%) worthwhile. This is significantly different from the previous year where several presenters reported that their participation was only slightly worthwhile or not worthwhile at all. In 2015, all of the responding presenters believed their participation was worthwhile. Presenter comments on the survey indicated that they were very happy about the high attendance number in sessions compared to previous years, the overall organization of the event, and the chance to share their experiences with their colleagues.

The presenters were also asked to rank the 2015 NWO Symposium on several factors, including organization of the event, room set-up, venue, food, Symposium staff, and the Symposium overall. The results from these items are shown below. The responses to these items indicate a positive overall experience.

Presenters provided higher ratings for many aspects of the Symposium than attendees provided. In addition, presenter ratings for the 2015 Symposium were generally higher than previous years, with the exception of the food and keynote, which were slightly lower than the ratings in 2014.

Presenters' Perceptions of Several Aspects of the 2015 Symposium



Conclusions and Suggestions for the 2016 NWO Symposium

The overall perception of the 2015 NWO Symposium was positive. Attendees perceived the event to be valuable and applicable to their professional practice, and presenters perceived the event to be valuable and appreciated the opportunity to share their work. The individual sessions were rated highly by the attendees, and the keynote address received many positive comments. Higher attendance overall and in the sessions seems to have positively impacted the perceptions of the presenters and attendees.

The NWO staff should consider the following recommendations in regard to attendance:

- Continue to offer between 10 – 13 sessions per block with less than 10 sessions offered in the last block of the day. The lower number of sessions offered in each block definitely contributed to higher attendance in each session and the overall positive ranking by the presenters.
- Target recruiting efforts to match the desired participation from preK-12 educators, pre-service teachers, and higher education faculty/staff. Some attendees mentioned that there weren't enough sessions for higher education. If a focus of the Symposium is on higher education practices, then recruitment efforts should be aimed at increasing the number of offered sessions in this area and the number of faculty/staff attendees.

NWO staff should also consider the following general recommendations for the 2016 Symposium:

- Continue to reduce the number of double sessions. Some attendees mentioned not liking double sessions and others mentioned that the double sessions let out early.
- Consider increasing the time available for each block of sessions. Some attendees and presenters mentioned that 50 minutes (plus 10 minutes of transition time) was not enough for many of the presentations. One possible solution would be to move from 5 blocks to 4 blocks and increase the time available in each block.
- Improve session descriptions. Several attendees commented that one or more sessions they attended didn't truly match the description in the program. One way to resolve this issue would be to provide more guidance to the presenters on what to include in the description and have NWO staff edit and review the descriptions more closely before including it in the program.
- Increase the amount and options available for breakfast and lunch. Many attendees reported not being able to eat breakfast due to the event running out of food. While this was due in part to the record number of on-site registrations, it would be worthwhile for the NWO staff to increase the number of meals provided for breakfast when making the reservation. Additionally, several attendees mentioned that more dietary options are needed for breakfast. One attendee stated, "The breakfast was too heavy on carbs; for low carb and diabetic diets, there needs to be protein offered." Others mentioned that breakfast was only "pastries" which didn't seem like a true breakfast and suggested either advertising it as a "pastry snack" or offering different food. The attendees were more positive about the lunch but several did comment on the long lines to get their food. One option for the lunch lines is to have NWO and BGSU catering staff at the entrance to the room guiding attendees to one of the four lunch lines instead of having them go to the first one they see when they enter the room.