

Training and Teachers' Confidence with Microsoft Applications

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Topic and Problem Overview

- The research topic regarded educators who are lacking the confidence to use Microsoft Apps to create engaging assignments for virtual learning due to a lack of training.
- The purpose of this research was to determine if providing training to educators on how to use Microsoft's Educational Apps (Word, Excel, Forms, PowerPoint, Sway and OneNote) would affect their confidence with creating assignments in a virtual setting.
- Participants gained an understanding of Microsoft Educational Apps with the intent to improve teacher confidence. Schools have provided teachers with access to these resources while providing limited or no training on how to effectively use them for their classroom.

Instructional Unit Overview

- The training was broken up into eight self-paced lessons: Microsoft forms, Microsoft word, Microsoft Sway, Microsoft Excel for organization, Microsoft Excel for student work, Microsoft PowerPoint, setting up a Microsoft OneNote Class Notebook, creating pages within Microsoft OneNote Class Notebook.
- Participants worked through the training lessons with support from the researcher through email, Microsoft Form and videoconferencing over a two-week period.
- Participants completed a pre- and post-training surveys on their confidence with using the Apps and lesson reflections.
- See the following slide for an overview of the 8 lessons.

Lesson	Objective
1. Microsoft Forms	Learners will, using YouTube training videos and a computer, successfully create a Microsoft Form assignment using the resources provided in the training, one out of one time.
2. Microsoft Word	Learners will, using YouTube training videos and a computer, successfully create a Microsoft Word assignment using the resources provided in the training, one out of one time.
3. Microsoft Sway	Learners will, using YouTube training videos and a computer, successfully create a Microsoft Sway assignment using the resources provided in the training, one out of one time.
4. Microsoft Excel Part 1	Learners will, using YouTube training videos and a computer, successfully create a Microsoft Excel classroom management resource using the resources provided in the training, one out of one time.
5. Microsoft Excel Part 2	Learners will, using YouTube training videos and a computer, successfully create a Microsoft Excel assignment using the resources provided in the training, one out of one time.
6. Microsoft PowerPoint	Learners will, using YouTube training videos and a computer, successfully create a Microsoft PowerPoint assignment using the resources provided in the training, one out of one time.
7. Microsoft OneNote Class Notebook Part 1	Learners will, using YouTube training videos and a computer, successfully set up a Microsoft OneNote Class Notebook using the resources provided in the training, one out of one time.
8. Microsoft OneNote Class Notebook Part 2	Learners will, using YouTube training videos and a computer, successfully create a Microsoft OneNote Class Notebook assignment using the resources provided in the training, one out of one time.

Data Collection and Analysis Methods

- Quantitative data was gained through the Pre-Training Survey and Post Training Survey Likert scale questions. Participants ranked themselves on their technology skills for each application. They could rank themselves as unfamiliar, learner, basic, proficient, or advanced.
- Data from the Pre/Post-test were compared to identify if participants perceived growth in their ability to use each application. Data was analyzed for each application, as well as the mean was calculated to identify average growth. Additional quantitative data was collected from the Pre-Training Survey to identify what previous training participants had participated in prior to this training.
- See the following slide for the table and graph showing the results.

Data Collection and Analysis Methods (cont.)

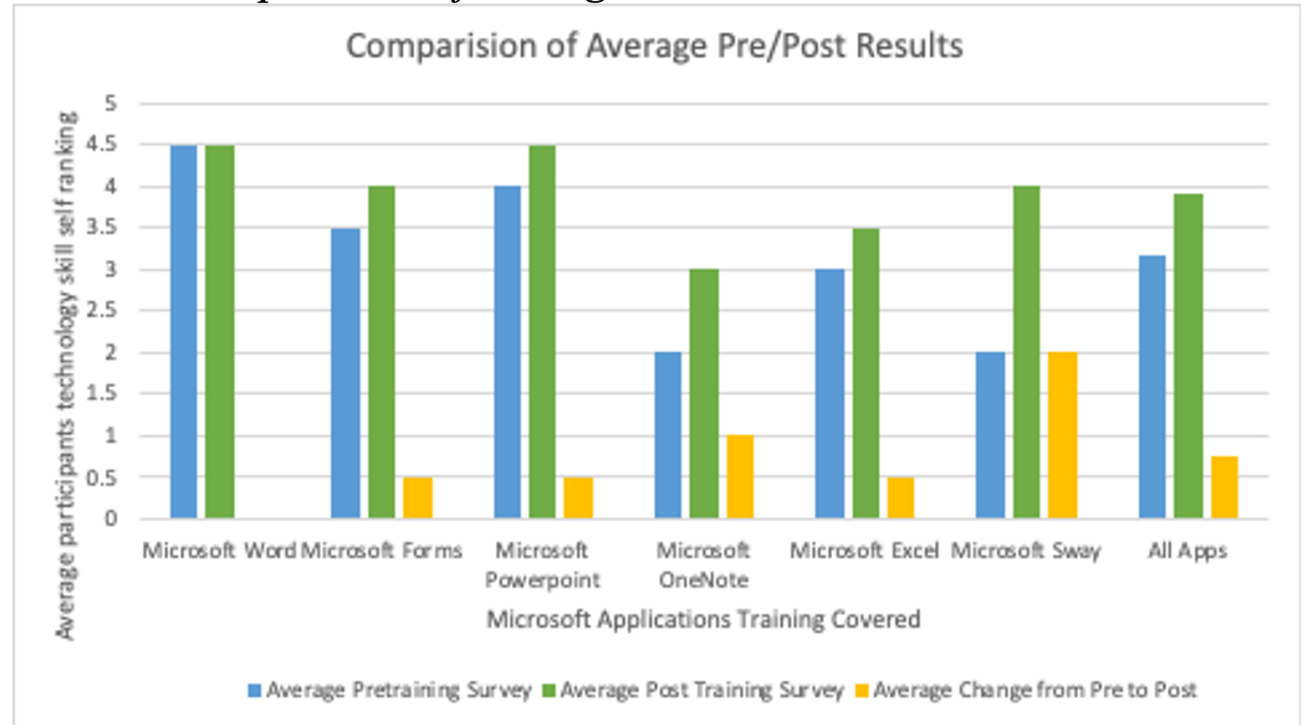
Table 1

Likert survey responses indicating confidence level with using Microsoft Applications.

Pre-Training Survey and Post Training Survey: Participants n=2

	<i>1=Unfamiliar 2=Learner 3= Basic 4= Proficient 5=Advanced</i>		
Microsoft Application	Pre-Training	Post Training	Change from Pre to Post
Word	4.5	4.5	0
Forms	3.5	4	+0.5
PowerPoint	4	4.5	+0.5
OneNote Class Notebook	2	3	+1
Excel	3	3.5	+0.5
Sway	2	4	+2
All Applications	3.17	3.92	+0.75

Chart 1 "Comparisons of Average Pre/Post Results"



Results of Quantitative Research

- Overall participants' confidence towards using Microsoft Applications to create materials was more positive following the training as evidenced by comparison of pre- and post-instructional means scores derived from the Pre-Training and Post Training Surveys.
- Participants identified themselves from a pretraining mean of 3.17 confidence level to a 3.92 level post training, indicating an 0.75 increase in participants' confidence towards using Microsoft Applications in their classroom.
- When looking at specific apps the greatest increase occurred for Sway with a mean increase of 2. Only one application, Word, did not show an increase but also did not show a decrease with a mean of 4.5 at both the Pre-Training and Post Training surveys.

Data Collection and Analysis Methods

- Qualitative data was gained through the pre/post survey open ended questions and the lesson reflections. Participants were able to describe their relationship with technology, factors affecting their confidence, their confidence level with each application and how they felt about the training.
- This qualitative data was used to identify themes affecting participants' confidence pre/post training and provide anecdotally evidence of the affect the training had on participants' confidence.
- See the following slide for the table and graph showing the results.

Data Collection and Analysis Methods (cont.)

Table 3

Factors affecting Confidence

Pre-Training Survey and Post Training Survey: Participants n=2

Factor	Pre-Training	Post Training
Time	2	2
Lack of opportunities to practice	2	0

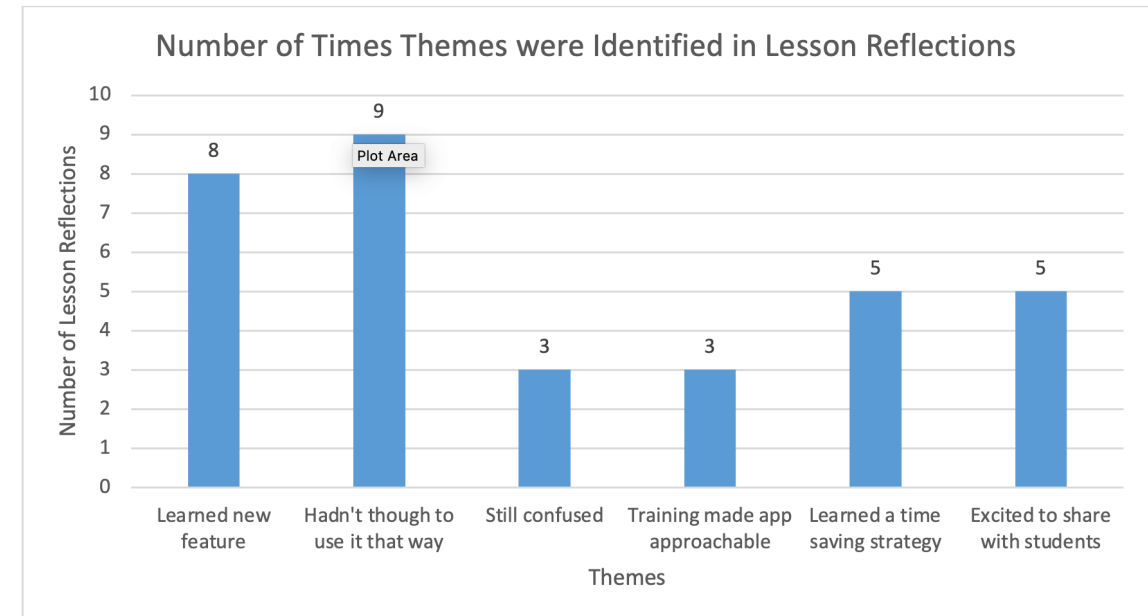
Table 4

Themes from Lesson Reflections

Lesson Reflections: Possible number of times identified n=16

Theme	Number of times identified
Learned new features	8
Hadn't thought to use it that way	9
Still confused	3
Training made application more approachable	3
Learned a time saving strategy	5
Excited to share with students	5

Chart 2



Results of Qualitative Research

- Participants initially discussed the themes of lack of time and lack of opportunities in their pre-survey but after completing the training, they only discussed the lack of time again. This showed that participants still feel that time is an issue affecting their confidence but that the training had provided them with the opportunity to practice using the applications.
- From the eight lessons a total of sixteen reflections were completed between the two participants. Common themes identified:
 - Participants learned new ways to use the applications
 - Excitement to use with students

Conclusions

- The conclusions reached from this study are that with training on using Microsoft Educational Applications that teachers will have increased confidence to use them in their virtual classroom to create resources.
- The solution to the problem of lack of confidence and training to use Microsoft Educational Applications in their virtual classroom has been identified by providing effective training on the applications.
- The proposed solution is to provide training in how to use Microsoft Word, Forms, PowerPoint, Sway, OneNote Class Notebook, and Excel Applications, specifically for use in their virtual classroom. As the data from this study shows, teachers who are provided training on these applications have increased confidence in using them to create activities within their classroom.

Strengths

- Learners were able to move at their own pace and had access to all the resources throughout the experience.
 - This provided learners the ability to rewatch the training videos as needed to review the material.
 - By moving at their own pace, they were able to move quickly through the material they already knew and spend more time practicing new concepts.
 - They were not slowed down by other participants questions.
- Requiring participants to practice using each app as they learned about them.
 - This helped them retain the information and increased their confidence in using it.
- The training was built into one of the applications, Microsoft OneNote Class Notebook.
 - Gave participants firsthand experience of what their students would see when using the application.
 - Showed participants how the different applications could work together.

Weaknesses

- Asynchronous nature.
 - Due to COVID 19 restrictions and teaching schedules, the training could not be completed in person.
 - Participants could still ask questions by email, Forms and video conferencing, but help could not always be provided right away which could have delayed participants' progress and left participants confused about some parts of the lessons.
- Length of the training
 - Participants struggled with keeping track of their training due to the amount of content that was covered. To help address this a checklist was provided but participants still had to deal with learning a large quantity of new information over a short period of time.
 - This affected the number of participants. Teachers are already limited with their time. It was difficult to arrange participants due to the voluntary nature of the training and the lack of credit towards their job. Two of the participants were unable to finish the training within the two-week time period due to responsibilities with their job.

Application of Knowledge for Future Possible Contexts

- Further investigation could include comparing the effects of different training methods on teacher confidence. It would be valuable to know if the instructional setting of virtual asynchronous training, virtual “live” training, and/or in person training has a greater impact on teachers’ confidence.
- All the participants of this study were middle school teachers so it would be interesting to extend this study with additional grade levels to see if that has an impact on confidence as well.
- This training focused on Microsoft Educational Applications but could be applied to a variety of different educational applications used by teachers, such as Canvas, Google Suite, Schoology, etc.