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An Analysis Of Increasing The Ability To Use Financial Functions On Spreadsheets For Vocational Students

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ABSTRACT

The results of discussions and interviews with one of the Accounting department teachers at the Padang 3 State Business and Management Vocational School, it was found that teachers need to improve their competence regarding the use of spreadsheets (Microsoft Excel). Teachers are still not used to using spreadsheets for financial report analysis and include operating various menus and functions in spreadsheet applications. So the process of learning spreadsheet applications only revolves around the use of common mathematical formulas and functions. This affects the competency of vocational school graduates, especially those majoring in Accounting. The world of work requires that vocational school graduates be able to operate this application well. This community service activity is carried out using training methods and creating training modules and videos. Implementation is carried out through three stages, namely material presentation, integrated training, and evaluation. It is hoped that at the end of the activity, there will be an increase in participants' skills regarding the use of spreadsheets for financial report analysis. The output of the activity is modules, videos, publications in mass media, both print and online as well as publication of scientific articles in national journals.

Introduction

Vocational education (for middle/vocational level education) or vocational education (for higher education) is a form of education that prepares the formation of skills, abilities, understanding, behavior, attitudes, work habits, and appreciation for the jobs needed by all members of the business world. /industry is supervised by the community and government, or in a contract with institutions and on a productive basis (Pavlova, in Sukoco; 2019). Therefore, vocational/vocational education is a level of education that is always dynamic in making changes to the educational curriculum by the growth of the job market and adapting to developments in science and technology.

Living in the digital era of Industrial Revolution 4.0, everyone is required to be fast and practical. Almost all sectors are influenced by the use of advanced technology. Therefore, everyone needs to become digitally savvy or digitally literate, namely the ability to know things intelligently and wisely about digital things. One form of digital literacy is mastering Microsoft Excel, which is the most basic hard skill to be able to adapt more easily to the digital era. If someone doesn't master it, you can be sure they will have difficulty entering the digital realm.

Mastering Microsoft Excel can hone your digital data and report input skills. If you don't study it seriously, this application does seem complicated. Not infrequently many people complain about difficulty operating it. If you succeed in conquering the complexity, the task of processing data will be very easy to complete. Processing data in the form of numbers

using Microsoft Excel provides its sensation. People who have advantages in this field will find it helpful to increase their potential more quickly and more pleasantly.

Figure 1. Accounting Teacher and Students

SMK Negeri 3 Padang is a vocational high school located on Jalan Sudirman No. 11, Padang City, West Sumatra. This school has 4 areas of expertise, and one of them is Accounting and Financial Institutions. This area of expertise uses the independent curriculum, and one of the subjects is Number Processing/Spreadsheet Applications which is given to class X students in the form of computer practice. This subject is also one of the competencies that must be possessed by Qualification IV Accounting Technicians (SMK graduates). In this subject, students are taught how to operate a number processing/spreadsheet program package using Microsoft Excel. However, in this subject, data processing places more emphasis on processing data in the form of financial transactions that produce financial reports, or what is known as Excel for Accounting.

In today's increasingly developing technological conditions, the use of Microsoft Excel for preparing financial reports has been abandoned, because there are many applications for preparing financial reports that are available and easily accessible, both paid and free. Microsoft Excel is not an accounting application so it cannot do work related to recording transactions efficiently. These limitations result in the need for significant time and effort to prepare financial reports using Microsoft Excel.

Microsoft Excel is a program for automatically processing data such as calculations, formulas, use of functions, tables, graph creation, and data management (Abdullah, et al; 2019). The priority is to use Microsoft Excel to process data into useful information for users, for example, to carry out financial analysis and display the results of financial analysis in the form of dynamic dashboard visualizations. Financial analysis using Microsoft Excel is carried out in the form of sensitivity analysis. For sensitivity analysis, Microsoft Excel can help measure the risk of the various options available through the What If Analysis feature.

Based on interviews conducted with Mrs. Nofia Erni, Excel for Accounting is still being implemented at SMK Negeri 3 Padang because teachers still have limited knowledge about Microsoft Excel for further financial analysis. He realized the weaknesses in the material because learning resources were also limited. Apart from that, the limited infrastructure at SMK Negeri 3 Padang, such as Microsoft Excel software which is still an old edition (2010 version), also hinders the development of increasing students' knowledge about more sophisticated Microsoft Excel functions. For this reason, it is necessary to provide training on the use of Microsoft Excel for financial analysis to accounting teachers and class X students at SMK Negeri 3 Padang.

Based on the situation analysis above, it can be concluded that the problems currently faced by partners are: Teachers' and students' poor understanding and knowledge regarding the function of Microsoft Excel, especially for financial analysis. Teachers' weak understanding of Microsoft Excel functions is greatly influenced by the age of the teachers, of the nine teachers in Accounting, four are about to retire. This results in teachers who are about to retire not feeling the need to upgrade their knowledge. However, preparing students to have the knowledge and skills needed by the world of work so they can compete must still be a top priority. Therefore, increasing teacher knowledge of Microsoft Excel through training must be carried out. Apart from that, in the SKKNI regarding Accounting Technicians, "Operating Number Processing Program Packages" is one of the competency units that must be fulfilled for the Junior Accounting Technician level (Qualification II/SMK). This competency unit competency test is more about how to process data for financial analysis, not for preparing financial reports. So providing training to students is also very important.

There are still limited learning resources for using Microsoft Excel. The current module is a module for preparing financial reports using Microsoft Excel. Meanwhile, the module for using Microsoft Excel for financial analysis is not yet available.

The research aimed to see the effectiveness of the training provided to participants. Is there an increase in ability or not? Apart from that, this activity also aims to improve the skills of teachers and students in processing data, especially financial data, using data processing/spreadsheet applications (in this case using the Microsoft Excel application). If understanding increases, it is hoped that students will have competencies that will help them obtain level IV accounting technician certification. Furthermore, it is hoped that it will create a desire for teachers and students to learn more deeply about the features of Microsoft Excel, such as the use of Pivot Tables and Pivot Charts.

Corti, 2020, examined the effects of the Mindful Effective Learning (MEL) intervention, which includes mindfulness, coaching, and learning strategy training to improve students' learning abilities. Corti found that in self-regulation in learning, students who were trained increased self-awareness, self-evaluation abilities, metacognitive skills, and organizational and elaborative abilities in managing lesson material. Then brief interventions based on attention and training as well as learning strategy training can improve students' effective learning. Aliyah, 2021, found that changes in learning media provided higher learning outcomes, namely using video media.

The ability to use information technology advice is very important for everyone, especially for accounting students who will work as professionals in the field of bookkeeping (Nazar et al., 2023). One application commonly used in bookkeeping is Spreadsheet. This application is commonly known and used for processing data, making calculations with formulas and functions, and also for preparing financial reports (Fajrinshanty et al., 2019). One of the world's largest companies has also provided a spreadsheet application that can be used for free (googlesheet. This application can be used without having to subscribe and the same files can be accessed at the same time because the basis for using this application is web based (Satria & Fatmawati, 2021).Provision for vocational school students in institutional accounting and finance programs is still inadequate for the ability to master spreadsheets (Bona, 2018). The existing curriculum still discusses the use of spreadsheets in general, and does not teach the use of financial functions specifically for accounting.

The development of information technology has forced everyone to adapt and utilize information technology (Affan et al., 2021; alfian, 2023; septa, 2023). The process of compiling data that produces information is influenced by continued advances in computer technology. Recent developments in information technology have enabled the development of computer-based information systems. This system allows business actors, especially cooperatives, to process their business activities. (Safelia, 2015). Not only that, digital-based technological developments are both offline and online (Wardoyo & Nuris, 2023; hanif, 2023).

To develop an effective learning model, every educator must have knowledge that suits the needs of students, because of the diverse characteristics of these students (Priansa, 2019, 187).Various methods are used for teaching this application. Teaching spreadsheets for bookkeeping can increase students' motivation and abilities through the application of cooperative learning models. (utaminingsih, 2022). Suripto, 2022, applies the blind method to improve students' fast typing abilities.Masoctavia, 2019, applies a project based learning model to improve students' accounting skills.

Methods

This research uses the T-test method to compare the averages of two independent data groups.Initial hypothesis; There was no significant difference in participants' abilities before and after training for SMKN 3 Padang students. In this study, a sample of 32 students from the 12th grade Institutional Accounting and Finance program was taken. The confidence level used was 95% (alpha=5%) to test the hypothesis.

A paired sample is a sample/group with the same subjects but experiencing two different treatments or measurements. For this reason, a two-way test was used, because there was a significant difference between the pretest and posttest averages.

$$H_0 : \mu_1 = \mu_2$$
$$H_1 : \mu_1 \neq \mu_2$$

Hypothesis beginning rejected, if:|t count | > t table or: Hypothesis beginning accepted, if: |t count | <= t table.

The calculated statistics (t count) uses the formula $t = \dfrac{\overline{X}_D - \mu_0}{s_D/\sqrt{n}}$. **where**

The information formula is ; D = Difference x1 and x2 (x1-x2); n = Number Sample; X bar = Average; S d = Standard Deviation from d.

$$\overline{X}_d = \frac{\sum D}{n}$$

$$s_d = \sqrt{\frac{1}{n-1}\left\{\sum D^2 - \frac{\left(\sum D\right)^2}{n}\right\}}$$

Results

Characteristics of the Research Sample

Students in the 12th grade Financial and Institutional Accounting program are students who are in their final year of education at a vocational school. However, because the research was conducted in the middle of the year, this student was only at the beginning of the first semester of grade 12. In the following picture, you can see that of the 30 participants in the sample, there was only 1 male participant, namely 3% of the total participants.
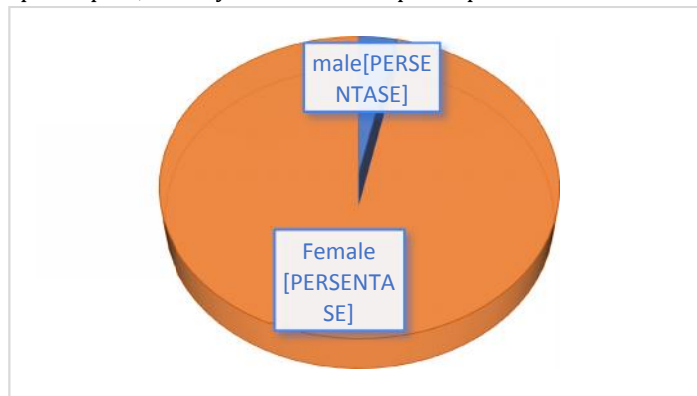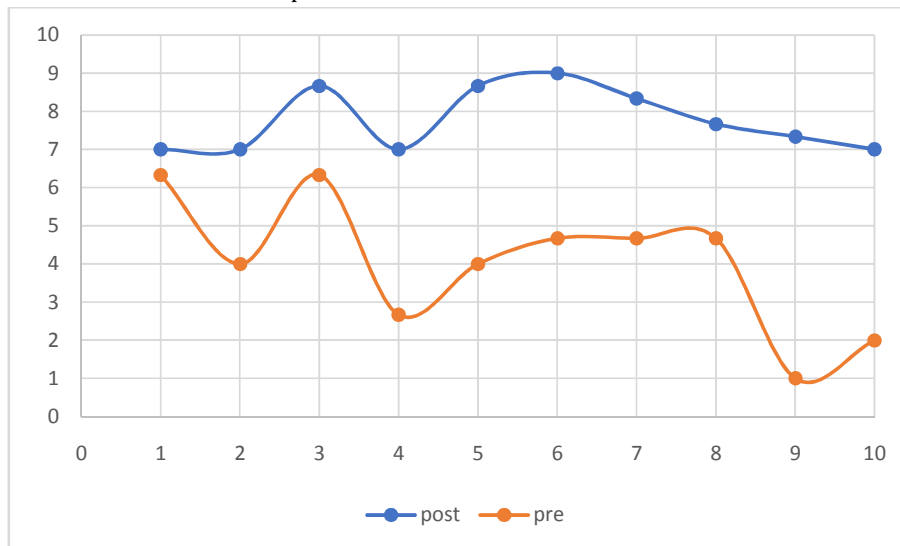

Figure 1 Participants by Gender

In the following picture, you can see the difference in participants' abilities before and after training based on 10 question items about financial functions on a spreadsheet.

The average student's ability to use financial functions before obtaining instruction was 3,969, according to the data. Following training, it increased to 7.906. hence there's an increase in description. There is little variation in the variance results, which hover around 3.6, and 32 sample observations were employed. with 32-1 as the degree of freedom (df). In

addition, the link is quite tight according to the descriptive form of Pearson correlation, which is -0.189. These findings indicate that the t stat is -7.606. The resultant value is identical to that found in the paired t-test data.

Because the hypothesis is two-way, it makes use of two tails. The t table yielded a result of 2.040 with a 0.000 p-value. The conclusion is to reject H0 because the p-value is less than alpha 5% or because the |t count| > t table. It was determined that there was a substantial difference between students' pre- and post-training financial function usage when H0 was rejected.

Descriptive Statistics

Table 1
Descriptive Statistics
t-Test: Paired Two Samples for Means

	Variable 1	Variable 2
Mean	40.32258065	77.741935
Variance	356.5591398	458.06452
Observations	31	31
Pearson Correlation	-0.163097917	
Hypothesized Mean Difference	0	
df	30	
t Stat	(6.7721713)	
P(T<=t) one-tailed	0.0000001	
t Critical one-tail	1.6972609	
P(T<=t) two-tailed	0.0000002	
t Critical two-tail	2.0422725	

Discussion and conclusions
Based on the discussion above, it can be concluded that vocational school students are greatly helped by the solutions provided by the research team. The training provided is very helpful in improving students' ability to operate financial functions on spreadsheets.This is in line with research conducted by Aliyah, 2021, which found that there was an increase in posttest scores compared to pretest scores for spreadseet learning subjects using online-based Problem Based Learning learning models with video media support and without media.

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