Online Stock Trading Learning through Real Bank Account

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Abstract: Students in the trading class are now conveniently accessing online stock trading application via smartphone/PC due to the massive development of the Internet. This advancement helps students to grasp better understanding through experiential learning. However, they are mostly just utilized the demo version of the application. This demo account has several limitations. It failed to simulate trading psychology of „fear" and „greed", the most important trading success factor besides good technical and fundamental analysis. This study helps testify the role of real account in improving students" trading skill. To this end, Wilcoxon signed rank was exercised employing 31 of sample size. The result shows that using real account in the trading class is an appropriate pedagogy tool. This research has a potential impact to provide renewed insights for trading instructors/lecturers in terms of new pedagogical tool in teaching online trading.

Keywords: online stock trading, real bank account, experiential learning, learning performance

I. INTRODUCTION

With the advancement of the Internet, more financial institutions are offering online services [1]. In Indonesia, online stock trading has been at the forefront of this trend since 2003 [2]. Investor can trade in the Indonesian Stock Exchange (IDX) through application-based trading system that can be accessed via electronic devices i.e. smartphone and PC which then is transmitted to the market to be matched with the lowest bid and ask quotes. The trade is executed and confirmed instantly within 24 hours if it is done in the market opening hours. This service also helps investors to access various kinds of financial information (e.g. real-time stock prices, technical and fundamental analysis, and portfolio management) anytime in the day. From investor"s perspective, such service allows them to handle their financial matters independently without the needs to rely solely on their stockbrokers" advice [3, 4].

Phillip"s Online Electronic Mart System, or more commonly known as POEMS, is the pioneer for Indonesia"s online share trading [2]. Established by Phillip Securities Pte Ltd in Singapore since 1996, it is a reliable stock trading and mutual funds investing application for Indonesia capital market. POEMS comes both in the mobile and website version. To increase public understanding of capital markets and the number of retail investors, Phillips Securities set a minimum balance of Rp. 100,000 to open a new securities account. This is an affordable cost for student who wants to open a real account and learn to trade. From 2016 to 2018, 170 new investors from Politeknik Negeri Bandung students are registered in Phillips Securities [5].

This application-based learning is favored by students [6]. In various fields, lecturer use application to facilitate drills and enrichment activities. The use of application-based trading in the trading learning system also supports experiential learning. Experiential learning builds upon the work of Piaget, Lewin, and Dewey [7]. Experiential learning theory consists of several models that stress the importance of direct experience and reflective observation. According to the model learning begins with a concrete experience followed by collection of data and reflective observations about that experience. Learning model that similar to the context of the real business is needed for students get the concept [8]. This belief is based on the theory of constructivism [9]. In order to construct knowledge, this theory promotes students to find and manage information by them, not by receiving mere knowledge [10]. The combination of observation as input and reasoning (rationality) in the process are those that deepen student understanding in this learning model [11].

The use of software in learning has been shown to be able to help the learning process in various fields such as health [12 -15], mathematics [16], electronics [17] and accounting [18, 19]. Several studies have also shown the use of online trading simulation/demo to encourage and motivate students to understand and master the capital market [3, 20-23]. However, none of the past studies was conducted to assess the use of real bank account in the online trading system. Therefore, driven by the identified gaps, this study aims to test the role of experiential learning using real trading account in enhancing students" stock trading skill.

II. LITERATURE REVIEW

The complexity of the capital market environment is influenced by the rapidly growing use of information technology. The impact of information technology on capital market developments has become one of the main topics at the moment [1]. The use of the Internet and smartphone has made the capital market a business that can be operated by anyone in anytime.

Online trading is a system (software or application) that allows stock investors to carry out trading activities using the internet, such as buying and selling transactions on the IDX directly [24]. This activity can be done through various electronic devices such as laptops, iPad, smartphones, or other devices. The system works almost the same as with internet banking transactions. Applications for online stock transactions owned by securities companies in Indonesia currently generally use two types of

systems, which are: (1) applications that must be installed beforehand on electronic devices that will be used such as on a PC, laptop, smartphone; and (2) applications that can be accessed only by visiting the website.

In general, the main difference in online stock trading compared to conventional trading is located from the media. In conventional trading, investors place an order by phone to the broker. While online traders only need to make orders using electronic device connected to the Internet. Other differences in detail between online trading versus conventional trading are described in Table 1. Online trading, because of built in application-based system, have various features that is not owned by the conventional one. Although some applications have certain features that are more advanced than the others, the features of online trading applications available in Indonesia as collected [24] are:

1. Auto Trading

Auto trading is a feature in which the system will automatically buy or sell based on specified orders. In this feature, an investor set a buy price and a selling price when a stock has reached a certain price. With this feature, the investor does not need to observe the market trend every day or call the broker continuously to monitor stock price. Investors may set buying and selling prices according to their respective trading plans.

2. Stock Price Charts and Indicators

Stock charts, are important elements for technical analysis, especially when stock charts are equipped with a variety of indicators needed. Complete indicators consist of Moving Average, MACD, Bollinger"s Band, Pivot Point, Fibonacci Retracement, Volume, RSI, OBV, Stochastic, etc. can be used in performing technical analysis.

3. News, Financial Reports, and Ratios

In addition to stock price charts, investors also need other references such as news and financial statements in determining whether a company is still financially sound or not. Complete fundamental indicators include Earning per Share (EPS), Price to Earnings Ratio (PER), Book Value (BV), Price to Book Value (PBV), Return on Assets (ROA), Return on Equity (ROE), Debt to Equity Ratio (DER), and Net Profit Margin (NPM).

4. Other Analysis

In addition to the common features, there is much other important information that can be seen in the online trading applications. There are many useful things to be the benchmark, such as stock ranking, broker sum, foreign flow, and seasonality, as well as corporate action information. The existence of accurate information about corporate actions such as stock split, dividend, and right issues will affect investors" confidence to make decisions.

Table 1
Differences in Online and Conventional Stock Trading

Online Stock Trading	Conventional Stock Trading
Must have/use through the Internet	Must have/use through telephone
Done by app	Done by calling the broker
Transactions could be checked in real time	Transactions could be checked in real time
Complete data in a platform (application)	There is no complete data in a platform
Investors put their own order without brokerage	Investors should put order with broker intermediaries
Low-cost	More expensive because of brokerage fee

Various features and facilities in the online trading make it easier for students to learn stock trading by doing so. Dewey, a pioneer in experiential learning, argued that a curriculum needs to accommodate activity-based learning because learning means something which the individual does when he studies [25]. Kolb expands on Dewey"s concept of education as Experiential Learning Model [7]. Kolb contends that knowledge is created and recreated through deliberate, reflective experimentation. The ease and speed of online trading offered by the application could motivates students to implement what they learn in the theory class and develop their own reflection from the experiment.

The implementation of experiential learning in Business Administration and Finance is extensive and evolving rapidly with technology. Spreadsheet applications have dramatically expanded the analytical tools with which students can assess practical finance problems [26-29]. The majority of AACSB-accredited MBA programs offer field studies to help bridge the gap between theory and practice [30]. McClatchey and Kuhlemeyer find that more than 600 instructors at over 600 institutions use stock market trading and portfolio management simulations in their finance classes [31].

Students" feedback for such experiential educations was positive. A number of studies have proven the impact of using trading simulation exercises in trading-related courses. Past studies find that the experiential nature of the simulation exercise contributes to student learning and enjoyment [20, 31]. Student learning quality has also increases when the pedagogy includes trading simulation as an experiential learning component [22, 23].

However, this kind of trading simulation is usually utilizing demo account. Demo account is an account offered by securities as a medium to study in the capital market class. Demo accounts are free and offer many features that contain real market information. The main difference of demo account with real account used by real investor is the equity listed in the account is not real money. Demo user is provided with an amount of virtual equity in his

account which later can be pretended to be traded in the market. Therefore, the profit-loss taking in the demo account is not real. That is why a demo account is called a simulation. This „simulation only" condition impacted to the students" psychology in trading [32]. Although the demo trading is able to simulate the trading techniques well, it failed to simulate trading psychology. Different from trading in demo account, emotions always appear when trading in a real account because the equity used is the investor own money. There are two main psychological aspects that are very influential on the psychology of trading, which are "fear" and "greed" [33-35].

Naturally, people are afraid of losing money. Most of time the perception of risk most influences the interest of investment [36]. In a real account, in case of loss, investors truly lose real money. This is what triggers fear in trading on real accounts. This fear usually causes investors to easy to use „cut loss and taking profit" feature in the trading system because the fear of falling prices [33, 34]. This action resulted on the profit earned is not as much as in the trading plan. In addition, a person also has a greedy nature. Because the investor wants to get as much profit as possible, they become overconfident. In this case, investors usually will increase stock order continuously regardless of the trading plan, caused in the market volatility [35, 37]. Risks and returns are the trade-off factors that should be considered in investment [38].

Therefore, since the cost of registering real trading account has become more affordable, using real account in the online stock trading class become appropriate. One advantage of using real account instead of demo account is that we can assess the students" real trading performance, including their psychological trading factor. Therefore, this study proposes that using real trading account will alternate students" trading performance. H1: There is significant difference in student trading performance before using real account and after using real account

III. METHODS

This research used quasi experiment that aims to find out a symptom or effect that arises, as the implications of the existence of certain causes [39, 40]. These causes are called treatments, or independent variables, whereas the possible effects of treatment are called impacts (outcomes) or dependent variables. The quasi-experimental type used in this study was non-equivalent group design, i.e. the measurement of the behavior of a group before and after the treatment. A total of 31 students are observed in a semester.

All of them are majored in the same department and have taken all prerequisite courses. Return on equity (ROE) as the paired samples were collected in the middle of the semester (pre-test) and in the end of the semester (posttest). The steps to be taken in conducting this experimental research are described in Figure 1. Data collected was not normally distributed (P=0.000) based on Shapiro and Wilk"s W test which arguably performs the best normality test for sample sizes between 3 and 50 [41]. Therefore, to see the difference between pre-test and post-test result, Wilcoxon signed rank test is utilized. This kind of rank transformation approach is a useful method in experimental analysis [42].
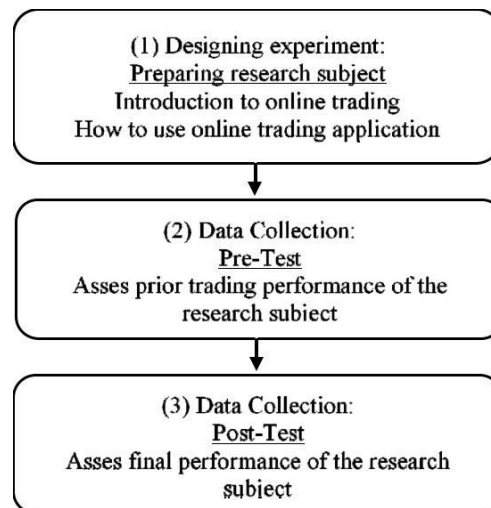

Figure 1
Research Procedure

IV. RESULT AND DISCUSSION

Table 2 contains univariate analysis for paired sample. The data shows that there is a positive alteration of 18 students" trading performance after using real account (mean rank at 13.58). This alteration (Z=-3.253) is statistically significant at the 0.01 confidence level, proven using real account as an effective pedagogical tool in trading class. Therefore,

H1 is accepted. This result extended past a study that confirms the effect of trading simulation in improving students learning performance [22, 23].

However, 25% of students don"t show any improvement using thing learning method, even 16% of them have negative result compared to pre-test. This result is suspected due to the shifting of learning from demo account to real account. There are also

major differences in technical issues on real accounts. Firstly, the speed of server response between demo and real accounts is different. Demo account is usually fast, while the real account is usually slower because real account server has more loads (users). Secondly, spreads on demo accounts are usually fixed. Different with spreads in real accounts that can vary depending on market activity at that time. Although these differences are technically not so conspicuous, but they quite influential in the buying and selling mechanisms that are done by stock traders [33]. Students who used to demo account will find some difficulties adjusting with the new system environment.

Table 2
Wilcoxon Signed Rank Test

Paired Samples (Post Test - Pre Test)	N	Mean Rank	Z	p
Negative Ranks	5	6.30	-3.253	0.001
Positive Ranks	18	13.58		
Ties	8	-		

There are also differences between demo accounts and real accounts in terms of its liquidity [33]. On demo account there is absolutely no liquidity, meaning the investor just trading by their own, there is no opponent. In the real capital market, there are always two parties, seller and buyer. If a buyer put a buy position in 10 lots of „ABCD" stock, the deal just confirmed when there is a seller who put a selling position in the „ABCD" stock as much as 10 lots at the same price. This is what we know as the process of supply and demand. In the demo account, however, all orders can be run without the existence of seller and buyer. This liquidity difference makes trading in the demo account becomes much easier than real account.

Negative result of some students in this study, however, shows that this study has some limitations. Although all students assessed have the same academic background, this study did not take students" trading interest and motivation into account. A person"s interest is often linked to his or her achievement with a particular subject [43-45]. In this case, instructor"s role becomes imperative. Seabra"s study found, 74% of respondents in their study stated that software could not replace the role of instructor in class [15]. The software only helps individuals who have the motivation and can evaluate their own learning performance [46]. Without instructor" supervision, users tend to focus more on the speed of application mastery. In trading learning case, the user is more motivated to master how to use the application than to learn the techniques of online stock transactions correctly. Therefore, instructors are still needed in the learning process [15, 47].

V. RECOMMENDATION AND FUTURE RESEARCH

Even though real account use is testified to improve students" trading performance, some learning factors still unrepresented in this study. Further research efforts are called to extend the study through implicating other learning factors such as student interest and motivation, so that pivotal implications could be delivered to the pedagogy model, especially in the experiential learning.

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