

***Prelude & Bio:*** This research was completed by Instructor Brent R. Webber at American Public University. American Public University is a 100 percent online virtual institution that delivers online education to both military and civilian students throughout the world. American Public University offers a variety of bachelor's and master's degrees. Brent holds a BA in Economics from Southern Connecticut State University and a MBA from the St. John's University School of Risk Management and Insurance (formerly the College of Insurance) in NYC. His career includes work as an equity trader on Wall Street, a statistical analyst for an NYSE listed insurer, and he also worked for a publicly traded reinsurance company at Two World Trade Center, NYC. This research was conducted as part of an M-learning grant that was awarded by American Public University to study unique ways to increase student interaction and satisfaction in an online classroom. The paper and work is dedicated to the most influential people that have molded me as a person and professional: Maureen Weber, Joseph Watson, Ray Reid, Bowen Greenwood, Keith O'Malley, Jerry Karter, Maxine Verne, Karan Powell, Wally Boston and Marie Gould Harper.

## **What Do Equity Traders and the Future of Online Education Have in Common?**

### **Purpose and Background of Research**

The purpose of this research was to find a unique and innovative way to create a mobile learning (M-learning) platform that interacts directly with an existing virtual classroom. The proposal was to look for a method of integrating real-time news events that were relevant to the class that was being taught. The overall objective was to then have students use that news content in a classroom environment to create a more interactive and intellectually stimulating learning community.

My background as an equity trader prompted me to research the possibility of using Bloomberg or Reuters news feeds as a method of filtering credible, valuable and relevant news-related course material directly to a student mobile application and/or student classroom platform like Sakai Learning Systems. This type of information distribution in a virtual classroom could be compared to how equity traders evaluate news releases to make real-time investment decisions in the markets. The research also included a study of the similarities between equity trading desks and the virtual

classroom environment, specifically focusing on the value of real-time news information in both areas. Cost constraints prohibited this research from building out an actual mobile platform that interacted directly with news distribution services like Reuters and Bloomberg News. As a result, the study mainly included physically introducing real-time news information into a virtual classroom and then evaluating student satisfaction and the education value of those events. The conclusions reached in this research can be used as an argument for or against building out and investing the capital needed to create a real-time mobile and classroom-based news distribution system for online classrooms.

### *Introduction*

Over the last twenty years, the traditional higher-education system in the United States has seen a technological transformation that echoes the changes experienced by the travel and hospitality industries in the last century. Advancements like the locomotive and the automobile provided growth opportunities for these industries, allowing them to cater to a greater number of customers and to create new markets. Similarly, online, or virtual, education has been able to continuously erode the market share of traditional brick-and-mortar institutions because of technological innovations. Technology has made education available to a larger audience in the virtual world.

What are we going to be saying about education programs in the coming decades? How should virtual students be educated in the future? How are virtual classrooms going to revolutionize the way students learn? How will student needs create the outline for future virtual-learning platforms? What can the value of real-time news information

dissemination in our financial markets tell us about how to best educate our students? In order to answer some of these questions we will look at:

- The development of efficient electronic platforms in our equities markets
- The link between virtual classrooms and trading platforms
- Learning theories that support a more dynamic and real-time classroom
- The value of information at a fast rate
- A summary of how this all provides a hypothesis for building a real-time news integration system for virtual classrooms.

#### **Development of Efficient Electronic Platforms in the Equities Markets**

Electronic trading platforms have transformed how our equities markets operate during normal market hours. In addition, the development of pre-market and after-hours electronic trading has created a situation where market participants are able to react to information more quickly. These electronic platforms have also increased market transparency and have created a fairer marketplace in which information sharing and gathering is done in a more timely and efficient manner. As stated in Reuters: “The linking of these electronic trading systems is intended to foster similar transparency for trading in NASDAQ and exchange-listed securities outside of traditional market hours to facilitate efficient execution of customer orders.” (PR Newswire, 1999). Market participants are now able to make timely decisions before and after the market closes, and act upon the improvement and linking of these systems has allowed all market participants to make faster and better-informed decisions.

More directly and fundamentally, these platforms were developed to meet a need that was based on trader demands to process trades during times that the traditional market did not originally allow. In order to meet demand, there had to be a method to execute orders. This led to the development of pre-market and after-market trading activity via electronic communications networks (ECNs) that make up Level II platforms as we know them today. These trading platforms, along with readily available news distribution systems, have created a more transparent and knowledge-based financial system in which greater equilibrium, more fairness and better information distribution exists for all market participants.

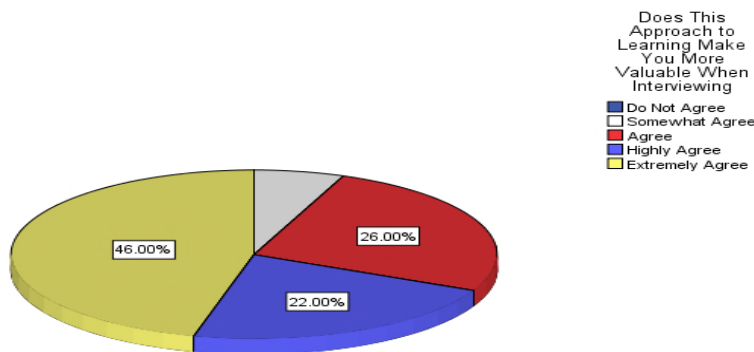
Similar to online education, virtual trading has become a major contributor to the daily market volumes in the business. As a result, there are many different virtual platforms that allow traders to place orders, watch daily tick charts and filter news that is valuable in the decision-making process. Many firms now also include mobile applications in their suite of products. This helps keep their customers informed about the market. These have developed in response to consumer demand for real-time information throughout the day. As Levitt noted, "Online trading has expanded the base of a powerful force in today's markets – the retail investor. Market participants are demanding more: twenty-four hour trading, immediate execution of orders." (Levitt, 1999). With the evolution of the Internet, the development of electronic communication networks and the introduction of faster news information distribution from companies like Bloomberg and Reuters, an environment has been created in which market participants have more efficient ways to make profitable and educated decisions in the markets.

### *The Link Between Virtual Classrooms and Trading Platforms*

How and why could the evolution of electronic equity trading platforms and of our trading markets in general provide a vision for how education should be delivered in the future? The answer to this lies in the assumption that knowledge is power. The speed at which information is processed and disseminated in our financial markets ultimately decides who wins and who loses. This can be compared with what is known as “trading ahead” or “front-running”. These terms essentially mean having information that allows you to react before someone else. Speed and faster reaction times are achieved through access to information. As Cummings explains, “In the case of front-running, upon receipt of a large client order, a broker trades shortly before placing a client’s order with the expectation that the client’s order will move the price.” (Cumming & Johan, 2013). Hence, the ability to act on information places that individual at an advantage.

At a more fundamental level, individuals who have access to television and the Internet learn more than those in developing economies who do not have access to these technologies. This places developed countries at an advantage in world markets and in our learning communities in general. As Simmons states, “IT will continue to advance the developed countries and leave the underdeveloped countries striving for equality.” (Simmons, 2012, p. 1). Inequality in the availability and access to technology for educational purposes can be compared to how some traders face disadvantages when they do not have ready access to information. Traders who have access to Bloomberg feeds and platforms that disseminate real-time data have already cleared the markets before non-privileged market participants have had a chance to react. The key is having access to information at a rate that exceeds that of your competition. From an education and

teaching point of view, students who have access to information on current events and real-time data will be better informed and educated than those who do not. Evidence of this was recently uncovered in a study that polled university students and their access to news information in the classrooms. After receiving real-time news that related to their weekly course material, 94 percent of students agreed that the addition of the real-time news material would make them more valuable in interviews and when generally talking to people about what they had learned (Webber, B. Real-Time News. Survey. March 2014).



The evolution of online trading platforms is similar to the evolution of online classrooms. The goal in each of these businesses has always been to create a platform that is interactive and at the cutting edge. However, in many current forms of online learning you will face a classroom that is generally more static in nature. This often means that students will enter a virtual classroom and face the following virtual format each week: 1) one required discussion question; 2) standard multiple-choice quizzes; and 3) several papers to be completed by the end of the class. This type of learning is already becoming obsolete and continues to evolve. Classroom material is starting to integrate more real-

time learning. Support of this evolving learning model can be seen in a recent article published by Forbes. The article notes: “A new model for peer-to-peer and peer-to-faculty interaction will need to be created, as this is one of the most fundamental components of classroom learning. There is a huge opportunity for instructors to create a more in-depth learning experience, whether by incorporating real-time discussions with industry experts or building small group experiences online, all of which may allow for more personalization of courses to students’ needs.” (Proulx, 2012). This is a vast change and distinct evolution from standard discussion boards and asynchronous learning. Static information and technologies are a breeding ground for stale and inefficient outcomes. Unsurprisingly, static trading platforms also breed traders who are one step behind their competition in the market place. Online education is being transformed to meet the needs of each student by becoming less static, more practical, more specific to the needs of the individual and by being available in real time. Students are demanding cutting-edge learning systems that integrate material that adapts to learning theory and real-time world news and events. By adding real-time news material that is relevant to course material, 78 percent of students also agreed, highly agreed or extremely agreed that the material helped them feel more connected to the classroom (Webber, 2014).

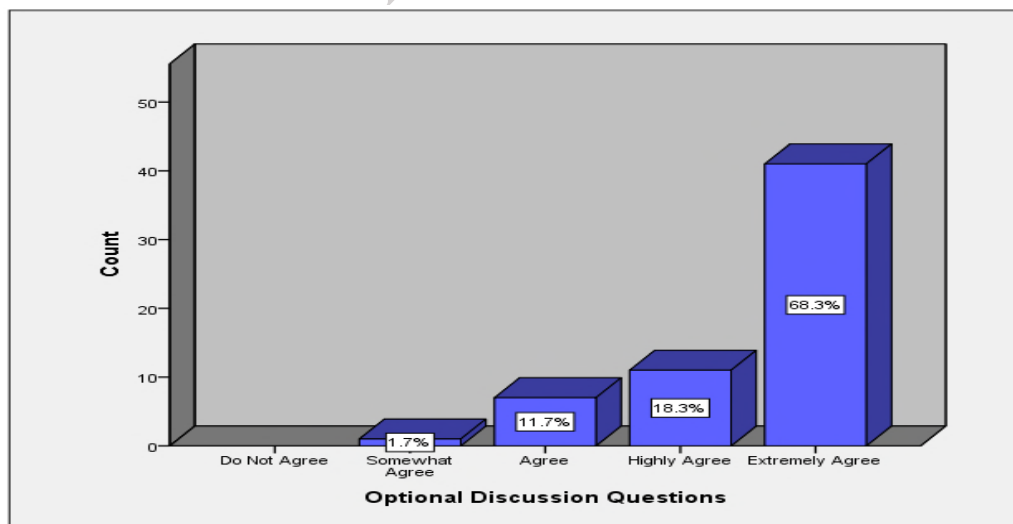
**Did This Make You More Connected**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Do Not Agree	2	4.0	4.0	4.0
	Somewhat Agree	9	18.0	18.0	22.0
	<b>Agree</b>	7	<b>14.0</b>	14.0	36.0
	<b>Highly Agree</b>	16	<b>32.0</b>	32.0	68.0
	<b>Extremely Agree</b>	16	<b>32.0</b>	32.0	100.0
	Total	50	100.0	100.0	

### *Learning Theories That Support a More Dynamic and Real-Time Classroom*

In addition to looking at student demand, need and technological innovation, educators need to realize that some virtual-classroom transformations will come from the basic understanding that each student brings distinct and different learning abilities to a classroom. Including material in a virtual classroom that is relevant to specific student backgrounds promotes a classroom that is more valuable and interesting for students. One of the most overwhelming and statistically significant outcomes of this research related to the students' desire to have choice in the classroom. Of the cohort, 68.3 percent of students extremely agreed that it would be interesting to be able to choose a discussion question that fit their particular interest level. An overwhelming 98.3 percent of the students polled either agreed, highly agreed or extremely agreed that an option to choose one of the two discussion questions each week would make them more interested in the classroom. (Webber, 2014). The option to choose clearly made students feel that classroom material would then fit his/her background best:

#### *Choice of Discussion Question Creates Greater Student Interest*

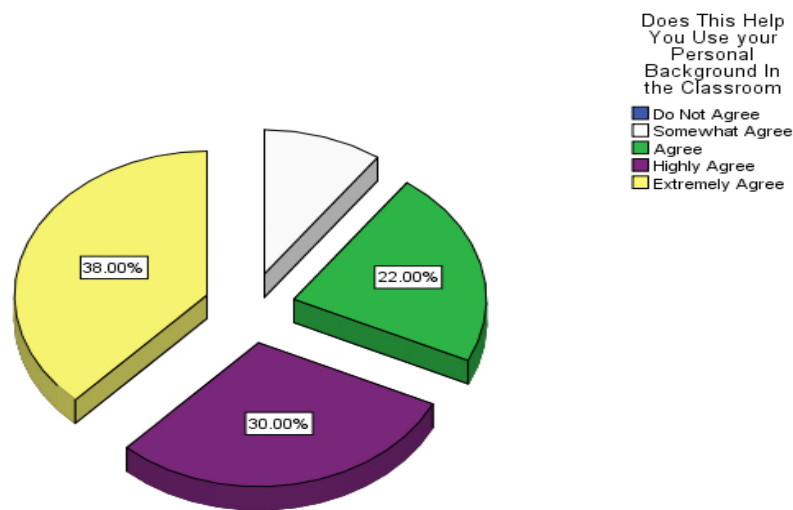




The importance of understanding distinct and different student learning abilities can be seen in the theory of multiple intelligences. This theory addresses and supports the premise that each learner achieves different outcomes based on his or her specific learning abilities. It suggests that each student has his or her own strengths or weaknesses based on different personalities. “The theory implies that educators should recognize and teach to a broader range of talents and skills. Approaching and assessing learning in this manner allows a wider range of students to successfully participate in classroom learning.” (ECT Nov–Dec 2005, pp. 13–14). Examples of different student learning abilities are musical-rhythmic, visual-spatial, verbal-linguistic, logical-mathematical, bodily-kinesthetic, interpersonal, intrapersonal and naturalistic.

An intrapersonal learner applies knowledge to the class discussion through unique interaction and suggestions that are developed during the student’s life. A naturalistic learner deals with information related to their surroundings and job experiences. For example, a naturalistic learner might associate the color red with a fire hydrant. Each person has his or her own naturalistic intelligence based on his or her surroundings. You might also compare this to learned helplessness, where your surroundings develop your personal character through your environment. A visual learner uses visualization skills and tends to enjoy and excel at the transformation of objects and problem solving through spatial awareness. Lastly, a verbal learner has high verbal-linguistic ability and favors reading and memorizing words and dates. This theory supports the findings of this research that students clearly voiced the need to have the option to pick discussion questions that fit their background best. Students want to use their particular intelligences as an advantage in classroom discussion. This study also concluded that relevant real-

time news distribution that related to student background helped students use their personal background in the classroom. Ninety percent of students responded that they agreed, highly agreed or extremely agreed that distribution of real-time relevant news material helped them use their personal background more in the classroom (Webber, 2014).



A static classroom cannot meet the needs of each unique learner. A static classroom creates an environment in which only select students will find activities that are relevant to his or her background and unique abilities. Similarly, a static trading desk that includes files of old earnings reports is somewhat useless for making decisions in the markets. Integrating diversified class material and including choice in discussion questions allows each student to pick news events and discussion material that relates to his or her learning abilities. It creates a level playing field where student diversity is utilized by distribution of information that relates to each learner and not only one particular learning ability. The inclusion of relevant and current news events also creates

learning environments in which students are able to discuss and apply current and relevant material that relates to his or her field of study. Why should we send students on interviews with outdated learning material when technology is advancing and giving us the opportunity to make our classrooms more interactive and student-centric? We should not.

### **The Value of Information at a Fast Rate**

Why is this discussion about the digital revolution in trading communities relevant to how online learning will develop in the future? Because people who have information first are often more successful than their competitors. The speed at which they can access information can place students and traders at an advantage over their competition.

Sometimes the issue of information access simply comes down to cost. Why do some groups in our society score better on the SAT? Why do some groups in our society consistently show higher acceptance rates at top rated universities? Why do some Traders make more money than others? The answer to these questions is generally two-fold: 1) the successful groups have access to the necessary information before their competition; and/or 2) their competition cannot afford to collect and use the necessary information to compete at the same level. A fundamental example of where costs play a role in educational inequity can be seen in the variance of standardized test scores among certain demographic groups in our society. In order to increase a score on the SAT, Carter reports the following: “Coaching schools claim that they can raise scores by as much as 250 points, and their claim that coaching works has been verified by a number of independent studies. Given that the cost of coaching varies from \$500–\$1,200, if

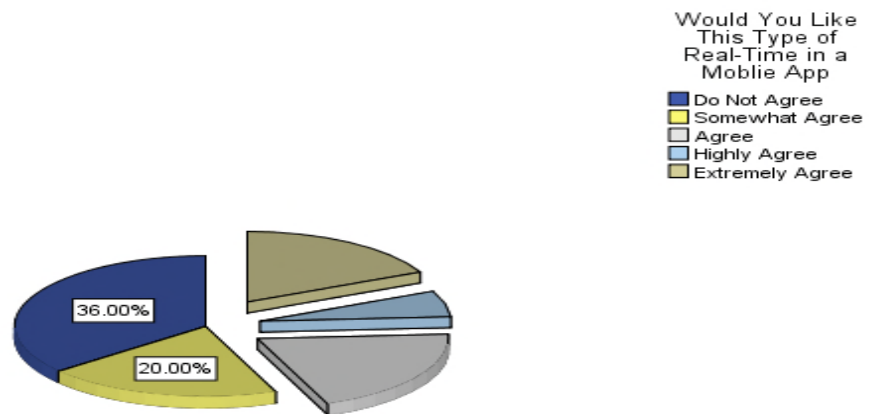
coaching works then the existence of effective coaching schools puts the poor at an even greater disadvantage.” (Cater, 1999). Similarly, it is often the elite financial market participants who are able to pay for expensive data that often gives them an edge on the general public in the open market. It is common knowledge in financial communities throughout the United States that fast access to key financial information will often help you make money. Proof of this can be found in a June 2013 report by the *Wall Street Journal*. It reported that speed of information is one of the most valuable assets to firms that want to have an advantage over their competitors. The report also stated that people who were privy to early news releases were estimated to pay \$75 million in fees to obtain the information before non-paying subscribers. Lastly, the report also cited that firms pay for it to avoid being at a “huge disadvantage.” At the same time, its cost can be “a barrier to entry” for smaller traders (Mullins, 2013).

The data from standardized tests and important data from our financial markets show that students and traders who are able to afford valuable information will generally score better on tests and have a better chance of beating their competition in the financial markets and in gaining admission to elite universities. Do success on Wall Street, valuable learning experiences in our classrooms, and student admission to elite universities have a distinct and statistically comparable relationship that is based on having the money to buy your way to success? The data speaks for itself.

### **Conclusion**

Virtual classrooms and equity traders both require access to real-time, fast, and up to date information to achieve optimal outcomes. The most interesting part of this research was

the conclusion that was reached about the implementation of a real-time mobile news platforms for students. The data in this study strongly suggested that there was a desire among students for greater distribution of relevant news information in classrooms. However, 56 percent of the students responded that they were either only somewhat interested or not at all interested in having a mobile real-time news distribution platform that distributed classroom news material to a device like a cell phone (Webber, 2014).



Based on popular media reports of mobile learning becoming mainstream, this was not the expected outcome to this question, especially considering that the students indicated a major shift towards a positive learning experience with the addition of the real-time news distribution within the virtual classroom itself. The reluctance of students to experience this learning process on a mobile device was somewhat confusing at first. However, when reviewing some of the qualitative feedback at the end of the study, it was clear that part of the hesitation grew out of the military background of some members of the

student body. There were comments that expressed concern about accessing information if students were stationed in countries like Burma. Upon further research, it was discovered that less than 1 percent of the Burmese population has access to the Internet. This seemed to confirm an earlier premise presented in this paper that related to citizens in developing countries being at a disadvantage because of technological shortfalls.

This research was initially tasked with creating a mobile platform. But one of the interesting conclusions is that a capital infusion directed toward creating a mobile platform might not be a wise investment. The investment might not benefit all sections of the student body, especially if the student body included a significant percentage of military students who are stationed in developing countries. Students generally want and enjoy real-time news distribution as a learning tool, but they are more interested in receiving the information via a direct classroom platform where they can access the information on demand. This outcome could be different if this study was completed at a university that catered only to civilian students who are largely domiciled in the United States. Students at American Public University clearly indicated that real-time news distribution would make their learning experience more valuable, but they hesitated to request mobile distribution of data. We can surmise that this conclusion relates to some students being based in third-world countries that would make mobile learning all but useless. The surveys in this study did not require each student to specify whether they were enlisted in the military or a civilian. However, it is interesting to note that the student body at American Public University is currently around 50 percent military and 50 percent civilian students. This leads to an interesting assumption that some of the 56 percent of students who were not enthusiastic about a mobile news-distribution platform

via devices like a cellphone may have been the students who were enlisted in the military and had concerns about being based in areas without Internet access. The commonly held belief that mobile learning is the future might not be so true, depending on the students you talk to and on their particular needs.

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Name	Type	Width	Decimals	Label	Values
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Q2	Numeric	8	2	Is Course Material Up To Date	{1.00, Do Not Agree}...
Q3	Numeric	8	2	Material Related to Background	{1.00, Do Not Agree}...
Q4	Numeric	8	2	Mobile News Real-Time	{1.00, Do Not Agree}...
Q5	Numeric	8	2	How You Participate More	{1.00, Do Not Agree}...
Q6	Numeric	8	2	More News About Field of Study	{1.00, Do Not Agree}...
Q7	Numeric	8	2	More Interactive Participate More	{1.00, Do Not Agree}...
Q8	Numeric	8	2	Optional Discussion Questions	{1.00, Do Not Agree}...
Q9	Numeric	8	2	More Interactive	{1.00, Do Not Agree}...

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23	5.00	2.00	4.00	2.00	3.00	4.00	3.00	5.00	3.00
24	2.00	2.00	2.00	3.00	2.00	2.00	1.00	4.00	3.00
25	5.00	5.00	5.00	4.00	4.00	5.00	4.00	5.00	5.00

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
26	4.00	2.00	3.00	3.00	3.00	3.00	3.00	5.00	2.00
27	2.00	2.00	3.00	4.00	2.00	2.00	5.00	3.00	5.00
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60	3.00	3.00	2.00	3.00	2.00	3.00	1.00	3.00	2.00

13-2014



Name	Type	Width	D...	Label	Values
Q1	Numeric	8	2	News Material Helped Relate to Student Background	{1.00, Do Not Agre...
Q2	Numeric	8	2	Would You Like The Real-Time News Distribution to Continue	{1.00, Do Not Agre...
Q3	Numeric	8	2	Does This Help You Use your Personal Background In the Classroom	{1.00, Do Not Agre...
Q4	Numeric	8	2	Did This Make You More Connected	{1.00, Do Not Agre...
Q5	Numeric	8	2	Would You Like The Real-Time News to Continue	{1.00, Do Not Agre...
Q6	Numeric	8	2	Would You Like This Type of Real-Time in a Moblie App	{1.00, Do Not Agre...
Q7	Numeric	8	2	Does This Seek Your Personal Skills to Be Used in Discussion	{1.00, Do Not Agre...
Q8	Numeric	8	2	Does This increase The Value of Your Education	{1.00, Do Not Agre...
Q9	Numeric	8	2	Does This Addition of Material Help Create a Real-Time Learning Experience	{1.00, Do Not Agre...
Q10	Numeric	8	2	Does This Approach to Learning Make You More Valuable When Interviewing	{1.00, Do Not Agre...

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	5.00	4.00	4.00	4.00	4.00	3.00	3.00	4.00	5.00	5.00
2	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
3	4.00	4.00	4.00	4.00	4.00	1.00	1.00	1.00	4.00	3.00
4	3.00	2.00	3.00	4.00	2.00	3.00	3.00	4.00	4.00	3.00
5	4.00	5.00	5.00	5.00	5.00	2.00	4.00	4.00	5.00	5.00
6	4.00	4.00	4.00	4.00	4.00	4.00	3.00	4.00	3.00	3.00
7	5.00	4.00	3.00	5.00	3.00	5.00	2.00	2.00	5.00	5.00
8	5.00	5.00	5.00	5.00	5.00	3.00	3.00	5.00	5.00	5.00
9	5.00	5.00	5.00	2.00	5.00	1.00	3.00	5.00	5.00	5.00
10	4.00	4.00	3.00	3.00	4.00	5.00	2.00	4.00	4.00	4.00
11	3.00	4.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00
12	5.00	5.00	5.00	5.00	5.00	2.00	2.00	5.00	5.00	5.00
13	5.00	3.00	3.00	2.00	3.00	1.00	2.00	5.00	5.00	5.00
14	3.00	5.00	4.00	4.00	5.00	1.00	1.00	3.00	5.00	5.00
15	5.00	5.00	5.00	3.00	5.00	1.00	5.00	5.00	5.00	5.00
16	3.00	5.00	4.00	2.00	4.00	2.00	4.00	5.00	4.00	3.00
17	4.00	4.00	4.00	5.00	4.00	2.00	2.00	4.00	5.00	4.00
18	2.00	2.00	2.00	2.00	2.00	1.00	3.00	4.00	2.00	3.00
19	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
20	5.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00
21	1.00	5.00	5.00	1.00	5.00	1.00	1.00	3.00	3.00	3.00
22	4.00	4.00	4.00	3.00	4.00	2.00	3.00	4.00	4.00	4.00
23	3.00	4.00	4.00	4.00	4.00	3.00	3.00	5.00	5.00	5.00
24	3.00	3.00	3.00	2.00	2.00	3.00	3.00	3.00	4.00	4.00
25	3.00	2.00	2.00	4.00	2.00	1.00	1.00	4.00	3.00	4.00

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
26	4.00	5.00	5.00	4.00	4.00	5.00	4.00	5.00	5.00	5.00
27	3.00	2.00	2.00	2.00	2.00	1.00	2.00	2.00	5.00	2.00
28	5.00	5.00	5.00	5.00	5.00	1.00	3.00	4.00	4.00	5.00
29	5.00	5.00	5.00	5.00	5.00	5.00	4.00	5.00	5.00	5.00
30	5.00	5.00	5.00	5.00	5.00	3.00	4.00	5.00	4.00	3.00
31	4.00	4.00	3.00	4.00	4.00	3.00	3.00	5.00	5.00	4.00
32	5.00	5.00	5.00	5.00	5.00	4.00	5.00	5.00	5.00	5.00
33	4.00	4.00	4.00	3.00	3.00	3.00	2.00	3.00	4.00	4.00
34	3.00	3.00	4.00	4.00	3.00	2.00	3.00	4.00	3.00	3.00
35	5.00	5.00	5.00	5.00	5.00	1.00	5.00	5.00	5.00	5.00
36	5.00	4.00	5.00	4.00	5.00	5.00	4.00	5.00	5.00	5.00
37	3.00	3.00	3.00	3.00	3.00	1.00	3.00	4.00	3.00	3.00
38	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
39	2.00	3.00	3.00	2.00	2.00	2.00	4.00	2.00	3.00	3.00
40	3.00	2.00	3.00	2.00	2.00	1.00	3.00	3.00	4.00	2.00
41	5.00	5.00	5.00	4.00	5.00	5.00	3.00	5.00	5.00	5.00
42	3.00	2.00	2.00	3.00	3.00	2.00	3.00	3.00	4.00	3.00
43	3.00	4.00	4.00	3.00	4.00	1.00	5.00	4.00	4.00	4.00
44	4.00	4.00	4.00	4.00	4.00	2.00	2.00	4.00	4.00	4.00
45	5.00	5.00	5.00	5.00	5.00	3.00	2.00	5.00	5.00	5.00
46	4.00	4.00	3.00	4.00	3.00	1.00	2.00	4.00	5.00	3.00
47	3.00	5.00	4.00	4.00	5.00	1.00	2.00	5.00	4.00	4.00
48	4.00	4.00	4.00	5.00	5.00	1.00	2.00	4.00	5.00	5.00
49	2.00	2.00	2.00	1.00	2.00	1.00	1.00	3.00	3.00	2.00
50	5.00	5.00	5.00	5.00	5.00	3.00	2.00	5.00	5.00	5.00

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