

The Odds of Finding a Job Without a High School Diploma

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INTRODUCTION

The high school where I teach is constantly evolving as the student population, and the community from which we draw our student population changes over time. The school was originally opened to service a predominately White upper middle class college bound population. Today the school has a diversified ethnic mixture that is predominately Hispanic and African American. This change within the student population has changed the school from a college preparatory school to that of a career and technology centered one.

New teacher trainees still request assignment for their initial teacher training here with our faculty but are made to recognize this will be more challenging learning environment for them to master during their initial teacher training; as are those assigned to us by Colleges and Schools of Education.

The average student is expected to master the TAAS Objectives and earn their diploma, if they stay within the limits of the four-year curriculum offerings which are based on the extended block schedule format. The average student is expected to score at or above one thousand on the SAT test and attend at least a Community College or a Trade/Technical School after graduation. Most will apply and attend a second tier college in Texas. Many will be accepted into a first tier Texas College, because of the ten percent rule passed by the legislature a few years ago, and their outstanding academic abilities. A select few will apply and be accepted by Ivy League Schools.

Due to the lower socioeconomic factors at home, our present students are more concerned with being able to help support their families today than with the ability to secure the academic promises of tomorrow that our institute is noted for offering. This inability to grasp the educational promises of today, limits the financial security of all their tomorrows. This severe socioeconomic downturn is reflected by our teaching staff's offering our current student body the same excellent level of instruction they always have in the past, but augmenting it with more self-motivational and guidance oriented objectives than before.

Our administrative staff is trying to maintain the same high level of educational offerings and opportunities that were presented here in the past. But the realization is that the students, while still committed to this level in theory and desire, can not always find the time to meet their financial, personal, and educational challenges to their families and school while attempting to perform at this high level.

With the tremendous turnover rate of our student population (due to relocation for financial reasons, and the adverse economic conditions that continue in their homes) the students we teach daily are not always able to gain access to computers, do not have the time to read daily newspapers, are unable to buy or find time to read novels and books, or be able to afford the extras that make any educational institute fun for the financially and emotionally secure. These reasons demonstrate to us that our school is now at a crossroads.

Yes, our students have become a bit rougher around the edges. Yes, they are a bit of a challenge sometimes even for the most experienced teachers who easily handle and teach average students, both effortlessly and effectively. But they are, just like yours and mine, still kids. They are deserving of the best future we can provide them through our continuous programs of educational excellence offered here daily.

Rationale

With the introduction of this unit I hope to present a set of lessons that will help explain to a student the odds of their completing their four-year academic training required for graduation. I feel that our average student is already aware of their chances of success in life without the diploma and recognizing this as a viable option in life for them. They know they need the diploma and the educational background it gives. They desperately want it, but feel that life has not only stacked the deck against them, it has also stacked the odds against them from the beginning. They see no opportunity to achieve their educational requirements, help support their families, and graduate on time.

They know that they will be required to help their parents financially and emotionally as long as they continue to live at home. They are currently doing this. But they also know that it is not necessarily what they want to do with their lives. They are crying out against the system that has set the odds against them from birth. Often these cries are directed at the very people they are asking to help them the most, their teachers and administrators. As an instructor of science, and a teacher with a lifetime of experiences to share with them, I feel the chances will probably not improve for any of these kids until a real connection, or tie into their reality, is made with their academic world. Their world is very limiting. Their futures are very dark. Their opportunities give them very little hope for the future. They need to see and believe in a rosier future for themselves and the families they are presently part of today, as well as their future ones. The family they can change, through exercising the educational opportunities being offered to them today for all their tomorrows, is the one they will create in the future, their own.

Purpose

This unit will help students to recognize the factors that will be needed and used to determine their chances of success in life with their given educational background. It will help to outline the factors they need to know to make an educated decision about their career choice. It will help them determine what is needed to help them in deciding what is a possible career for themselves. It should help establish the criteria essential for their career field by establishing the correct school curriculum necessary to complete the pathway offered in the career catalogue found in their school, the Dictionary of Occupational Titles, and the employment sections of their local newspaper.

If my students are to have any chance to change the odds of success in their lives, they must become aware of the different requirements of the jobs they are seeking. They must become aware of the necessities they must meet and fulfill on their journey to that future. If they are able to correctly identify these factors they will be able to determine the probability of reaching their own future goals and thus have created a better opportunity for obtaining that rosier future for themselves and their family.

In their desire to achieve these goals and become acceptable to their future employers, the average student will need to meet or exceed the expectations set down by their parents, their teachers, and their prospective employers. They will need to shift their values and understanding of the system, as well as their environment, to achieve their true goals and not be blinded by youthful ones that can, all too often, lead to failure in life. They will have to learn there is more to life than their responsibilities to either their current family or their educational system. If they hope to modify their future successfully, they will, in some cases, have to become students again.

They will have to prepare themselves to fit into the society of the people who are presently employed in their future career choices. Most important is their need to balance their present employment schedule with their educational time requirements so they can achieve their goals, as well as continuing to help support their extended family. Finally, the student will need to learn how to trust the system's personnel so they can obtain the necessary moral and ethical values. as well as gain the assistance required to tackle the questions, they will need answered in their transition from a middle school child to a self sufficient adult leading a personally rewarding and productive life.

Lesson #1: Determining the chances of breaking the Home Run Record.

The probability in favor of or against something being true or happening often stated in the form of a ratio (the odds are ten to one against it happening) is how we define the term odds (McMillian Dictionary, 698). Odds then are based on the factors that we use to determine if there is a likelihood of an event occurring, and or making a difference if it does occur.

The chances of anyone hitting seventy home runs again in a single season, like McGwire did in 1998, is directly related to the player's ability to play in enough games, come to bat enough times, and hitting enough balls out of the park during that particular season. Each of these factors can change the odds of the record being broken in that season. For example, if a player plays everyday; goes to bat three and a half times per game; hits a home run every tenth time up to bat; plays in all one hundred and sixty two games that season, then the probability (ratio of the number of changes favoring the occurrence of the event to the total number of occurrences of the event) of his hitting seventy home runs are calculated as being 164 games times 3.5 times at bats per game divided by ten at bats needed to hit a home run. He would fall short of his goal. He would hit only 57 home runs with the odds set this way against him. If we change the odds and allow him to hit a home run every ninth time at bat in our formula, he would hit 62 home runs but still fail to break the record. If we change the odds and allow him he hit a home run every eighth time at bat he would succeed. He would be able to hit 71 home runs based on our formula. Therefore, the factor that determined the odds of success in this formula computation was the number of times at bat between home runs hit. This is one factor we selected to use and allowed to change when we were determining factors to use in our formula used to compute the probability of a player's chance of being able to accomplish the feat of hitting seventy home runs in a single season. In other words, he has no chance of hitting the required number of home runs if he hits a home run every tenth time at bat, because the factors used to determine the odds, when computed, says he will only hit 57 home runs if he plays everyday. Going to bat 3.5 times per game and hits a home run every tenth time at bat requires more games (202) than he has available to him (162). What would he have to do to be successful in his quest to hit seventy home runs then?

Change the factor that we used to determine his odds of success. For example: decrease the number of times at bat between home runs while holding the other variables constant. Therefore: if he hits a home run every ninth time at bat he would have a total of 62 in 162 games played. If he hit one every eighth time at bat he would hit 71 in 162 games. If the player were to begin the season hitting a home run every eighth time at bat and plays every game while getting the 3.5 times at bat, he should hit the 71 home runs needed to break the record. But now chance (possibility) gives us a second variable, the probability (the likelihood) of playing in every game.

What is the probability of a player being able to play in every game in a single season? I would have to say next to impossible after we examine the statistical record of the players who have played in past years. Even with this recorded data, this is not something we can ever predict for certainty ahead of time. Louis Gerhig played 2130 games without missing one. That was thirteen seasons and a record that stood for sixty plus years. The opportunity to miss a game is as good, or greater, in some cases than the opportunity to play in a game. We could then say that the chances of missing one game are very high. Is it acceptable to say this if we consider that the player could be in an

accident and or be hurt at least once during the season? Yes, this does happen all too often. (Can you determine how often?) Is it acceptable to say the accident will affect his play? Yes. If so, then to the degree that he would be unable to play the next game? Who can say for sure but from the records it appears it is very likely? This is the uncertainty factor that we need to remember when we quote the probability of it happening is as likely as that of it not happening. It is the random chance factor (lack of a planned event or occurrence happening) that will cause the mathematical models we generate to be wrong occasionally and allow for records to be broken. (Can you think of other factors we should consider?)

Can we really expect to predict the outcome of our future in similar manner? Yes, but to a lesser degree. Unlike the Ball game, the variables in life can be very complicated and extremely difficult to calculate. Being able to recognize a variable that should or should not be considered and included in the formula used to calculate the odds is often more difficult than the computation itself. These variables can be such things as taking wood shop and carpentry in high school for fun and then as an adult applying for a job in cabinet making. Your fun becomes your livelihood. But how did you know that in high school when you took a discovery course and learned that you enjoyed it. There are many hidden factors that are unrecognizable by as important to a young or inexperienced observer. Most of us cannot look at a single factor at a time and make a predication that it is valid, or even somewhat realistically related to our formulated model, based on the single factor. However the variables we select to calculate the odds can be very good indicators and give very beneficial results to us if we remember they are only predictors of possible outcomes that we choose to use calculate. Good predictors yes. But only predictors that are as good as the variables we selected to examine them by. What factors do you think will affect your future? Are you sure?

Unit Activities and explanations

“The chances of an event occurring is directly proportional to the need to have it occur” is one of those statements we so often hear and believe. But it is almost never true. The chance of an event occurring is dependent on the variables we select to compute the likelihood of that event occurring and how these variables are related to the outcome of the event itself. If there are two opportunities for an outcome to happen, then there is an equal chance either one of them will occur at any time.

If there are three equally possible outcomes, then the probability of one of them happening during any single event is one in three. (For example, if we have three cards, say the king, queen and jack of spades, and we draw one card from the three, then there are three possible, equally likely, outcomes: The king, queen or jack of spades. For example, there is a one in three chance of the drawn card being the queen of spades.) With this many opportunities for a single event to occur, it would reflect the reduction in the odds if one factor influencing the occurrence of that event where changed. If, for

example, there were four cards instead of three, then the chance of picking any one of the cards would be one in four. If instead, we were to toss a pair of coins, then the chance of two heads would be just one in four. Of course, we could allow for additional outcomes permitting the coins to land on their edges and stay that way. In this way, the probability of a specific outcome occurring continues to reduce with each new variable we add to the range of possible events.

The probability (likelihood) of the desired outcome occurring during the event is also reduced by this factor. If a fair dice has six sides and we throw it, then only one of the six possible faces can emerge. The probability of selecting or predicting the correct face is one in six, or a sixteen point six percent chance. As we look at the events in life we will realize that in real life we cannot always be aware of the number or kinds of variables that affect the odds facing us. Some times, as stated above, the hidden factors are the ones that influence the odds the most and are the ones we miss. They are obvious to others who are older or more experienced, but still hidden from us. If we think a job paying ten dollars an hour is good today, will it still be good paying in ten years from now? The average high school drop out rarely sees this as an outcome when they decide to quit school early to work at this “apparently high paying job” of today. But with the addition of life’s variables, rents and other payments in our formulation of the odds of success, we now see the decisions made by their parents to quit school and stay with their high paying jobs why they seem like slave wages to us today. They came to realize to late, they are living their parents’ life of poverty forever. They even realize they are dooming their children to their struggles in the future by keeping them out of school to help the family survive. This is not the life they expected or desired when they dropped out of high school to take that job that appeared to pay so well then. The cycle continues for their families without the educational needs or requirements to advance in life and break out of the cycle of poverty.

If we compare the throwing of dice and the opportunity of selecting and obtaining a job as the same application of chance (the likelihood of something occurring), we should be able to better recognize and consider the factors needed to compute the odds of success based upon these factors.

Random chance (an unplanned for factor or occurrence that happens without being considered as a possibility in advance) is an occurrence that can change the odds of an event’s occurrence regardless of the various factors we use to compute its occurrence. An example of this would be that one flight in a million crashes. Does the aircraft company count every flight and then cancel the one-millionth flight? No, it does not do this because one can not be certain when or where that one millionth flight will be taking off from or returning to when it crashes, if it does crashes for whatever reason. It could just as easily be the first or the fifth or the five hundredth one that crashes. Random chance says that it will occur when, or not, it does. We will not be able to predict accurately when or where it does, if it does actually occur. But occur it must in one in every one million attempts, in this example. The unfortunate part is that each one of the attempts could be the

unsuccessful one. Because it is unknown and unpredictable, we say that it is as likely to occur at this time as well as any other time and therefore unpredictable. Another way of thinking about such a random (likely) event occurring on your next flight is to say it was dumb luck. That is another way of saying it was random luck at work.

Another example of this we could consider is that of the six being on the left side of the die held in the left hand of a left-hander when thrown to the left will be more favored to be a six upon landing than if it would if it were held in the right hand of this person when thrown. Is this true? No. I cannot answer directly why this is so because it has no explanation and that makes it a very unlikely event if it happens every time. This is not a random event because it is repeatable. The ability to predict the events suggested for that throw of an honest die from either hand it must have an equal opportunity to be any of the six points possible on that die when thrown, including the six. Yet probability implies, by its definition, that there can not be a possible predictable advantage to the thrower using either hand and still continue to throw a six every time. The chance of this happening is not likely or possible under normal conditions.

We can now predict that a person with a degree from a University is more likely to get a job than a high school drop out if everything else is equal. Can I honestly say this is so? No, but the probability of the occurrence is high if the job requires a degree to be a qualified applicant. The opportunity of the non-degreed individual landing the jobs comes into play when we consider that the only applicant for the job, one that must be filled today, is the non-degreed individual. In this case the probability factor says that the non-degreed individual is the best qualified applicant for the job and must therefore be hired today. In honesty he is neither the best nor the least qualified applicant, he is the only available applicant when that job needed to be filled. The luck of the draw gave him the opportunity because there was no qualified applicant applying who could have taken the opportunity from him.

We will show how random chance plays in an event using samples of rice taken from a bag in lesson three. This will show us how probability can make a random sampling easier to understand but not necessarily any easier to explain. (This could be the same explanation we will give to a student when attempting to convince that student to stay in school until they have completed their educational goals and requirements for their degree. We know this is truly important for their future but how do we demonstrate that probability is at work in their lives and failure to heed it as an important factor they have overlooked. This factor could cause them to fail in life if they do not correct it.)

When one looks at the opportunities for success in this world and weighs it against the opportunities for failure, then one recognizes that success is a truly amazing turn of events for the unqualified individual attempting to compete fairly in any endeavor against qualified applicants. They have effectively eliminated themselves from the opportunity to compete. Each requirement added by an employer reduces the opportunities for the drop

out to compete with the qualified applicant. Even when the drop out is successful in obtaining the job initially, the chances of keeping the job is reduced with each new factor added by their employer. When the job calls for an additional amount of educational training or working experience, skills they may not be able to master, these factors will become counterproductive to their continued employment. Eventually, the odds suggest that the drop out will be “dropped out of the employment program” by the same people who hired him initially. Thus the drop out is the one who is habitually being fired and the stigma of failure is his to keep for the rest of their life.

In any random sample of a group, there are suppose to be all kinds of individuals. In real life the opportunities to exercise this randomness is not possible, because everyone maintains or exceeds the minimal requirements to be hireable. This is true because the pool employers draw their applicants from are numbered and arranged in advance for them when they begin looking for a perspective employee. The applicants are prescreened and marked in such a way that some are already acceptable and added to the list of qualified applicants by the screening person. Because of this, most applicants will not be seen by the employer for one reason or another. We will look at certain job listings lesson #4 and determine if an individual is qualified or not for future employment. Then help them decide how to reeducate themselves so they will be qualified in the future.

Lesson # 2: The Probability of an Event Occurring

What are the chances of a coin being a head or a tail on any given flip? (What is the chance of your being qualified for a particular job being advertised in the daily newspaper?)

The student will take a standard coin and flip it in the air a fixed number of times. The student will then record the number of times it lands as a head or a tail. Based on the flip total the student will predict if the coin will be a head or a tail on the next flip of the coin.

Since the chances of a coin being a head or a tail on any given flip is fifty percent, the probability of it being a head is therefore fifty-fifty for any given flip.

How do we explain that for any particular flip of a coin? A coin will lay on its face or its tail whenever it lands on a flat surface. Therefore it will have the head up or the tail. The chance of either event occurring for a fair coin is even.

How do we then explain that successive flips of a coin can be a head or a tail each time, instead of alternating as predicted? The answer is that the predicted outcome for the flip of a particular coin cannot really be used to predict the actual outcome of any single toss of that coin. The probability can predict the outcome of a large number of flips that have been averaged together over a period of time and then considered as the probable outcome for any number of events but it can not predict accurately any single event any

better than random chance would. In the case of a single toss, anything is possible on any given toss or successive tosses. But the odds say that the predicted value will be seen if the toss is fairly done over a long enough period of time. That there will be a greater probability that the predicted event will occur if it is a truly random flip of the coin than if it is not goes without saying as true. If everything is truly fair and the coin is honest, no one can for certain say which it will be, heads or tails, in advance of the flip of that coin. It is even possible that it will be neither a head nor a tail if it lands on its edge. The edge is then said to be the random chance element here. This element is what we are talking about in relationship to the drop out getting a good job and is indicative of the odds of a drop out qualifying for a degree position.

A similar event that can be predicted is the opportunities available for a high school drop out to get a job requiring a degree. Since any given toss of a coin, or an event with two choices, can contradict the odds of a particular occurrence happening, probability plays a part in the equation when considering who is or is not hired. So does the predictability of your employability depend upon the factors present and or hidden from you at the time of the selection process or is it them the needs of the employer that directly affect your chances of being hired? These variables are not always known in advance. Can you count on random chance working in your favor when you apply for a job?

The answer is, too often, yes for an introductory position or minimum salary type job. They are the jobs that pay at the minimum level or just above it. They appear to pay well initially for a student living at home without any fixed expenses to pay, but not so later on when the student lives alone. They usually have no opportunity for advancement in them without a degree. Students take these jobs because they are readily available to them. Their pay scale is large when compared to the nothing the students are currently earning. Yet within a short period of time the student unfortunately learns it is the same meaningless type of job some of their parents barely exist on. The cycle continues. Poverty produces more poverty.

If a truly fair coin is tossed, there is always a fifty-fifty chance it will be a head on any given toss of that coin. If an ad in the paper requires the candidate to have a high school diploma, the probability of a drop out getting the job is already less than fifty percent. As a matter of fact, they are extremely remote unless random chance occurs to help him. But you will say, "He still got the job!" Yes, if the job called for a semiskilled worker, is an entry-level position, or is the type of job no one else qualified for wants to apply for at that or any other time. These factors force the employer to hire the unqualified worker. But what is the probability of this random occurrence happening?

It depends greatly upon the number of, and type of, applicants applying for that position. If the applying applicant is a qualified worker who meets the requirements for the job, he will be hired over an experienced worker who is not qualified even if the

unqualified working is willing to accept the position at a smaller salary. Does this happen often?

Yes. But that is why the education is so important. It prevents the skilled, trained, or educated laborer force member from having to take a substandard job, that would normally attracts the average drop out, because they are under qualified for a better paying one. This also prevents the continuation of the necessity of their children working to augment the family fortunes like they did them. Being qualified breaks the cycle of poverty and the necessity for their own children losing their opportunities for a childhood and a successful future in life just to help support the family. The qualification factor is the key to opening the door to employment in our system. It is the factor that reduces random chance to its minimal level. Can you list and determine other factors?

If one now tosses two coins, will the coins still have a fifty-fifty chance of being heads or tails upon landing on any given flip? (Repeat directions above and flip the coins a number of times. Record the outcomes and compare these to the results for the single coin toss.)

No, the probability of both heads and is now one in four. This is because there are four equally likely outcomes on any given toss: both coins land heads, both coins land tails, the first coin lands heads, the second tails, and finally the first coin lands tails and the second heads. This lowers the probability of the predicted outcome to one in four. This one in four chance decreases the odds of anyone correctly selecting the outcome to an event in advance of the actual event occurring. In terms of winning (or getting a job), typically if you have to not just get one toss correct (heads) but a whole run (a pair or more of heads). This is why gambling is so risky. You have a one in four chance of winning on any given toss of two fair coins. The coins should follow the predicted odds if random chance is eliminated. The opportunity for one or both of the coins to land on its edge would be an example of a random chance occurrence. Therefore, random chance must be put back into the mix.

What if they do not both land heads as predicted twenty-five percent of the time? Then you could win or lose more than a quarter of the time. Chance has reduced your odds and opened the door for the opportunist to be qualified over you. The drop out could obtain the job over the qualified degreed person. This is the argument that some drop out became famous for making something of him or herself without the education is based on. This is the random occurrence that happens once in a while, and as such, is cited as the exception to the rule.

If an employer requires you to have a high school diploma and experience to be qualified to apply for their job opening, then the drop out is eliminated. With two criteria, the chance of you getting the job is greatly diminished. Because the diploma and the experience are both given as a requirement, the unskilled and uneducated are not

considered usually. If they are, random chance is at work again. If they are considered and selected for the job over a qualified applicant, is it because the qualified applicant does not want the job or has a problem? Are they are accepting a survival type job, just like your parents did before them?

No, they might not want the job; and yes, it would be a survival type job for the non-degreed person. These are all too often the sad truths in my opinion. Because of this, the only opportunities facing the disenfranchised worker who does not have the minimal skills or necessary requirements to obtain a good job is the poverty and disillusionment of their parents. The non-degreed worker is not the bottom of the barrel, but rather the one who is holding up the bottom of the barrel. Without the degree they will continue to do so until they earned their degree.

When three coins are tossed, the chances of predicting the outcome are very small: one in eight. Only a fool would gamble with a one in eight opportunity to win when their livelihood and that of their life's is at stake. A twelve point five percent chance of being hired is not good odds for everybody. Yet the high school drop out who competes with an experienced worker with special job skills is taking that chance. Each new requirement prevents the non-degreed and or unskilled worker from succeeding in the job market. Yet random chance says the coins will land on their edges simultaneously on very rare occasions. Would you base your career and the lives of your family on this occurrence?

With four events, or requirements, the chance to land a job without qualifications, experience, skills, and references is almost non-existent. Random chance is vertically eliminated here. Yet it still comes through occasionally. Enough to make it that one in a million chance that the four coins will all land on their edges and continue to stand. This tells me that education is the key to open the doors for any person's future, as well as that of their family.

Lesson # 3: Predicting the Future

Facts:

When we predict something, we are attempting to determine the outcome of an event in advance of the event's occurrence. A prediction is therefore a pending act or prophecy. It is what could happen in the future based on some criteria that has already been established. The ability to predict something can be computed and recorded as the odds of an occurrence happening based on the variables used to formula the odds of the event to be determined. Therefore, we can predict to some degree the outcome based on the established criteria of the event occurring and make realistic odds of it actually happening.

When we examine the requirements for earning a degree, we can measure the percentage completed to help us establish the number of requirements we still need to complete. This is done by subtracting the completed requirements from the incomplete

ones. This determines the amount of unfinished work we have left to complete. Therefore, as we continue through our degree plan, established for us by using the criteria listed in the course catalogue for the type of degree we are attempting to earn, we can figure the percentage remaining to be accomplished. In our school a student can earn a diploma as a regular student, a gifted and talented student, or an advanced placement student.

Each degree program has its requirements. As the student completes a requirement, they can check their own progress against the listed requirements and compute the percentage remaining to be done. The average student needs four English courses and four history courses to graduate. Therefore, the forecasted prediction of this student graduating on time would, or could, be based on the ability of the student to complete these required courses in their proper time sequences.

If a student is on track to graduate, the student will complete one English and one History course per year of regular attendance. If they are unable to complete the required courses in the time allotted they will become deficient. The greater the number of courses they become deficient in the greater the probability of them not finishing on time and their eventual dropping out of school.

The amount of deficiency can therefore be a predictor of the ability of the student to finish his graduation plan. It also indicates to us when that student is going to need extended time to finish the required course work and intervention by a professional to help the student to finish their course of study on time.

The requirements for each student changes from program to program, as well as school district to school district. The student will also need to complete the state, district, and school's required graduation exams, as well as any or all of the individual school's wavered or specialty requirements. These are also factors that can be used as predictors in our graduation formula used to compute the odds of graduation on time or at all by the student. These can be used to determine the probability of the student completing the required course work to graduate on time or at all. They can be listed as the extenuating factors or criteria necessary for graduation.

Now have students determine their percentage of completion and their probability of finishing their degree plan on time.

Lesson # 4: Estimating the number of events or items in a group. (Predicting your chances at landing that job.)

Take a one-gram sample of rice from a one-pound bag. Count the number of kernels in the one-gram sample. (The broken ones count as one half a kernel. You must

decide if they are truly worth half a kernel or not. If they are less than half a kernel throw them out.) Record this number in a data table. Now estimate the total number of kernels in the original sample bag.

Next take a one hundred gram sample and again count the number of kernels in the sample as before. Record the results in the data table again. Now estimate the total number of kernels in the sample bag.

Next take a thousand gram sample and again count the number of kernels in the sample as before. Record the results in the data table again. Now estimate the total number of kernels in the sample bag.

Finally, take the entire bag and count the number of kernels in the sample as before. Record the results in the data table again. Now estimate the total number of kernels in the sample bag.

Was this a difficult process?

- Yes! The counting and the deciding of the qualification of each broken kernel of rice slowed the process down. (Just as we saw in the US presidential election of 2000.)

Was the number of kernels in the sample the same for each sample of rice taken by each group?

- No! The number of kernels varied from group to group depending upon the size of the sample and the broken kernels present, as well as, the ability of the students to accurately record the correct number of kernels after their count. The randomness of the measurement is also to be considered. If it is a truly mixed bag and the sample is taken from any part, the kernels will be randomly mixed and each sample will be different to some degree.

Was the estimate made after each sample closer to or further from the true amount?

- It should be closer with each successively larger sample size tested. The ability to predict the number of kernels of rice is not exact for large size samples. The numbers of kernels are uncountable because the sample bag holds such an enormous number of rice kernels. Many more than we could easily count in a day. The randomness of the sample taken also guarantees that the samples will never be exactly alike in number of kernels twice because the kind of and number of broken rice kernels will vary each time with each sample taken.

What does this say about the number of opportunities opened to a drop out?

- It should tell you that the higher paying the job, the greater the number of qualified applicants there will be trying to get the job. The drop out's

chances of landing this type of job are less with each criteria used to qualify an applicant.

The dropouts were represented by the broken kernels in the samples counted. These broken kernels represented the unqualified applicant or the person without a degree. As you had difficulty deciding if the broken kernel should, or should not, be included; so does an employer when considering the application of a drop out who is not qualified for the position being offered. If you are unqualified, or uneducated, your application is usually not added to the list of those that are qualified and in contention for that job. If you apply with a false set of qualifications, the employer will fire you when they discover this. They could even have charges brought against you for fraudulent information on your application because this cost them time and money.

Each job listing above the minimum level is extremely tough to obtain. The number of qualified applicants decreases as does the requirements to get the job. If you are unable to train or obtain the required skills or necessary attributes to qualify yourself for employment, the employers will no longer consider your application.

Look at any sample of rice taken from any where in the bag. Does it truly have the correct number of kernels of rice that we predicted it to have? The answer is no. Regardless if we take a five-gram or five hundred gram sample of rice, the number of kernels will always be different for each sample taken. This is the random factor at work again. The greater the number of events, or kernels, the closer to the predicted value we will come. Therefore, the opportunities for a drop out to out score or out produce a degreed individual diminishes rapidly with each spiral upward on their career path. Their chances to land the next job on the upward spiral will also spiral downward more rapidly with each new step up the ladder you try to make. The degreed individual has proven their ability to stay the course and see the job to its completion when they earned their initial degree. The drop out has not. Probability says that a sample taken anywhere in the bag will produce unfinished kernels that the educated must determine if it is qualified for admission into the applicant group and be counted. This elitist's opportunity exists for the best-trained and educated group who does the deciding and the counter of the unqualified. The drop out is again shut out of life's opportunities. The drop out cannot determine the availability of their peers or the qualifications used to determine if they could qualify for the jobs being offered. No one wants a drop out to determine the hiring policy for them. This unfortunately includes the drop out himself/herself. They know the kind of results or workmanship they are likely to see from a dropout. They know them personally.

Lesson #5: The ability to balance things. (How to determine the priorities in life and their relationship to our stress levels.)

Facts:

Stress is defined as the mental or emotional tension or pressure caused by a situation. It is the one thing that one learns to handle through educational avenues and serious dedication to problem solving. The educated learns to handle stress because they are taught to balance their life around the needs of the family, self, and job. This ability to handle the stress and strain in life is one of the skills taught them in school. It gives them different options and ways to handle life's problems better than the drop out can or often does in my opinion.

As with all factors that tend to rob an individual of their ability to recognize and operate within a system, stress is a serious condition. It tends to blind the person to their mood and temperament changes. The educated tend to ask for help from the people around them. They tend to believe those around them when they are attempting to help them while they are under stress and need this help. The drop out never learns to rely on, or ask for, the assistance of others because they never learn to cooperate or to go along with the flow. They can develop this talent in time but seldom do.

Exercise: #1 Determining the Stresses

Students will divide into groups. A student will then place a meter long metal bar on a ring stand and balance it in the middle. The next student will place another rod upon the first at a ninety degree angle while balancing it in the middle.

Next, two students will each place a different rod at a ninety degree angle to the last rod but at the ends of that rod, They will attempt to balance them there without knocking over the entire stack of rods.

Next, four students will place a rod on the end of the last two rods with the two new rods being placed on either end of the last two rods but at ninety degree angles to them. The new rods should balance and not knock over the previous stack of rods.

Next eight students will place a rod on one of the ends of the last four rods. They will be at ninety degree angles and balance. The new rods should not knock over the old stack.

The primary problem with this assignment is: Learning to work together to balance the stack while adding new rods. As the tier of rods grow, the ability to add rods without knocking the old stack over is diminished greatly. Each person who adds a rod must learn to cooperate with and wait for their teammates to complete their task or the stack will collapse and fall over. This stress over success should build as each layer is added.

Is this difficult to do? Initially it is an easy task to perform. But with each new tier, the difficulty level grows and the need to cooperate increases. The ability to correctly

balance and insert rods on a geometrically expanding stack is difficult because the ability to place rods remain limited. This is due to the number of students working on the problem at any given time doubling but the number of rods increasing linearly. More hands to knock over rods; greater stress on each hand to be successful.

As with life, each new task or assignment adds to the pressures one must deal with to perform their function. If they are able to share the load, or collaborate their efforts with others, they will be more successful. If one is unable, or untrained, to work with others, one is destined to failure as the pressures of life increases. Just as the student who feels high school is too difficult or boring to deal with on a daily basis decides to quit school and find excitement in the job market; they are too quickly disillusioned with their search and the stresses it produces. They often are trying to return to the very school system they rejected and is now shutting them out.

After finding employment they discover that their employers will give them multiple tasks, that are multitasked in nature, as well as requiring them to complete everything on time, or even early if possible. For the untrained, or uneducated, this pressure could and often does cause them to fail. (Just as in school.)

If one adds the pressures of a job, a spouse, a family, children, payments, and wants and desires we quickly see that life is very complicated and demanding, as well as very unfair. For the educated, the demands of life can usually be easily handled. The educated are the ones assigning the workload for others to finish. They are the ones who create the tasks and thus find work to be fun and the job rewarding for themselves. They are the ones who can balance life's rods and not see their future crash around them like the demonstration rods did with us.

If you think the ability to juggle school, your teachers, your parents, your girl/boy friend, and your job is difficult today, wait until you are the parent of a child. All the things your parents are trying to get you to do, or accomplish, will become your task to do for your own children. "The cycle continues to go around and come around both, for every generation". Be sure you will be able to hold the difficult rods (or irons in the fire) life gives you and keep them perfectly balanced in your future. If you do, you will reach your desired goals in life.

Lesson #6: Determining the importance of an event. (Which requirement is the one you must have to get a job or complete a task)

The requirements to graduate, or to land a job, is often dependent upon what choices an individual makes. The course work one chooses to follow is often the determining factor for one's future job. If you peruse a technical field you are likely to find a job quickly but not be well rewarded. If you follow a specialized curriculum you will not have as many choices but they will pay much better later. If you follow the general curriculum your opportunities for employment are great but the rewards are less.

Each of the degree paths followed at Westbury High is designed to help a student obtain their best future possible. The high school drop out was unprepared or unwilling to follow any type of degree plan then or in the future without further specialized training or help.

Exercise #2: Job Search

Using a daily newspaper (I used the Houston Chronicle from April 26, 2001) have the student determine the different types of jobs listings for a day, week, or any period of time. I selected a day to base the following figures upon:

There were 23 professional jobs listed.

There were 5 sales types jobs listed.

There were 12 skilled type jobs listed.

There were 24 unskilled and entertainment types jobs listed.

There were 12 general types jobs listed.

There was a 30% opportunity to land a professional job. These types of jobs were paying from an unlimited amount to \$50,000 a year. (23 listed divided by a total of 76 listing equaled 30%.) All were requesting professional education and training along with many years of experience.

There was a 7% opportunity to land a sales position or job. These types of jobs were paying from \$100,000 to minimum wage per hour. Only the minimum wage jobs were requesting little or no experience. The other jobs required many years of experience or training to land the job.

There was a 16% opportunity to land a skilled job. These types of jobs were paying from \$25 to \$7 per hour. All were requesting education and training along with many years of experience. All required membership in or certification from a union or skilled training organization.

There was a 32% opportunity to land an unskilled or entertainment type job. All listings were requesting certain physical and emotional skills. The ability to follow directions and/or take direction well was high on their list. These types of jobs paid

minimum wage to whatever you could make at the job offered. (Tips, salary and tips, or whatever they could make in whatever way possible was acceptable here.)

There was a 15% opportunity to land a general type job. All requested certain physical and emotional skills. The ability to follow directions and/or take direction well was high on their list. These types of jobs paid minimum wage or less. These jobs were for people with no skills, degrees, or ability.

The professional level listed 97 job opportunities, sales listed 61 job opportunities, skilled listed 8 jobs, non skilled and entertainment listed 200 jobs, and general listed 125 jobs. The types of jobs are also a function of the education of the individual doing the applying.

Professional listed Ph.D. in Chem. Engineering, Sales listed Telephone solicitor, Skilled listed plumber and plumber assistant, and General listed Security Guards. These types of jobs are available to anyone. Do you qualify? Call and ask.

Now! You open the newspaper and do the same thing I just did, but decide if you truly qualify for the position listed first. Once you have selected the job you are qualified for, call and ask if there are additional qualifications not listed in the ad. Are your qualifications the same as you thought they would need to be or did they request different ones? If they are different, determine the type of course work required to obtain those qualifications to get the job.

If you are fair, you will discover that as a high school student you are unqualified for every job except the general category. These are the types of jobs that you will be able to look forward to in the future if you fail to complete high school today.

ANNOTATED REFERENCES

Houston Chronicle: Employment Section and assorted sections of scientific interest to my class and field of study.

A newspaper provides the latest information that a person can use to determine the locations and types of jobs available in their area. The ads list the requirements as well as the experiences required to obtain the position.

Susan Lieberman, *The Real High School Handbook: How to Survive, Thrive, and Prepare For What's Next*. (A Mariner Original. Houghton Mifflin Company, Boston* New York.)

Informs high school students of the outcome possibilities of their high school years if they follow set patterns while trying to achieve their goals in high school.

Dictionary of Occupational Titles; Volume II Fourth Edition, Revised 1991, US Department of Labor Employment and training Administration.

This book provides the student with thousands of possible jobs in hundreds of different fields of employment. It lists some qualifications as well.

Peterson's four-year Colleges: 1997 Edition (27th) Peterson's New Jersey.

This is the first place to locate the college of your choice. It lists the universities and the requirements needed to obtain information about acceptances and their programs.

Index of Majors and Graduate Degrees: 1998 (20th annual edition) College entrance Board, New Jersey.

Provides students and teachers a listing of professions that a student can achieve if they so desire and earn the proper degrees.

Kathryn, Ross, and Ross Petras, *Jobs* (A Fireside Book: Published by Simon and Schuster, 1997.)

Gives the types of jobs available and the requirements needed to be considered for them.