

An Alternate Route For a Career Related to Engineering Education: A Kumon Franchise

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Abstract

Kumon North America, Inc. (KNA) is North America's largest supplemental education provider. In studying the relation between KNA and engineering, it has been found that nearly ten percent of all Kumon mathematics instructors have left successful engineering positions to run their own Kumon franchises. These franchisees work either full or part time with pre-K and K-12 students to ensure their students' success in mathematics. The engineering background appears to serve as optimal background in guiding Kumon students towards potential careers in mathematics, science, and the technology fields. Simultaneously, by moving from engineering to entrepreneurship, these instructor/engineers find themselves in an excellent, independent job position. This paper discusses the flow of practicing engineer from a regular salaried position to independent entrepreneurship involving the K-12 supplemental education environment. It also provides information about the benefits and disadvantages of the career change, based on interviews with Kumon franchisees.

Introduction

While in the last decade Kumon NA has enjoyed substantial growth, the potential for growth in the upcoming decade is enormous. Kumon NA is presently serving just under 200,000 students in 1,500 centers in the United States and Canada. However, to reach the same type market saturation currently seen in Japan, Kumon would have to add over three million students to their North American markets. Clearly there is vast potential in this area for engineering entrepreneurs, with their unusually strong background in mathematics.

Background

Kumon utilizes a methodology created in Japan in the early 1950s by a high school mathematics teacher, Toru Kumon (Figure 1). It begins with the philosophy that all children have enormous, unseen, untapped potential to learn and grow. The goal of the Kumon Method is to provide each individual child with the tools, plans and guidance to achieve their true potential. Kumon uses a highly individualized program that allows students to progress at their own pace, working at their individual achievement



Fig. 1: Mr. Toru Kumon, Founder of Kumon Institute of Education Company, LTD.

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level and moving forward in incremental steps as they master the material they are currently working on. This individualized approach not only builds academic skills, but also strengthens study habits, improves concentration, and increases self confidence through daily comfortable practice with steady, small challenges.

Students typically visit a Kumon Center twice a week with a parent to study under the guidance of their Kumon Instructor (franchisee) for about one half hour per subject. Students do from fifteen to twenty minutes of Kumon homework at home on the other five days of the week that they do not attend the center. This daily practice method, which continues throughout the year, is a low cost, high value alternative to conventional tutoring. Students typically complete between three to ten worksheets in a day, depending on the level they are at. The range of Kumon mathematics levels and a sample worksheet are provided in Appendices A and B.

When Toru Kumon created this program for his own children over fifty years ago in Japan, his son was able to do calculus by the time he reached sixth grade. Toru also invited neighbors' children to participate. In time, the program developed into what became known as the "Kumon Method"; it eventually grew into the global business it is today. In the early 1970's, the first Kumon Center opened in the United States in New York City. Now, Kumon is the world's largest supplemental education program, with over 3.6 million students studying in over 24,000 Kumon Centers in 44 countries around the world (Figure 2). In the United States and Canada there are over 1,500 centers with student enrollment of nearly 175,000 students.

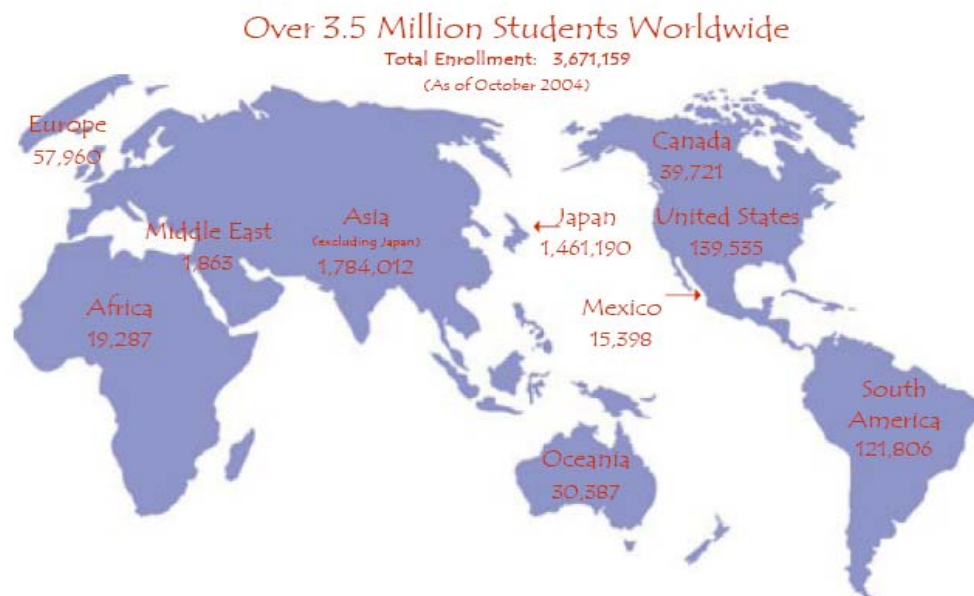


Figure 2: Kumon worldwide enrollment, October, 2004.

The Kumon Franchise System

Each Kumon Center is individually owned and operated by Kumon Franchisee. The Kumon Initial Franchise fee is very modest. The March 2004 Uniform Franchise Offering Circular (UFOC) states the franchise fee to be \$1,000, with typical start up costs

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(due primarily to office rental space) ranging from \$7,875 to \$30,045. The suggested tuition rate to charge each student is currently \$80 per subject per month. In North America, a typical Kumon Math and Reading Center provides both math and reading programs and offers 114 subject sales per month. A monthly royalty fee of \$33.75 is paid by the franchisee to Kumon NA, Inc. (the franchisor) for each subject taken by a student. Franchisee/Instructors become certified in the Kumon Method of learning after a training period of six months or less, which encompasses two trips to the National Training Center in Chicago, IL and extensive home study, including completion and proficiency demonstration of all Kumon materials. Centers generally operate in retail/professional commercial locations, although some early franchisees operate in community centers or churches. Most students attend for enrichment in the subject, while others participate for remediation and additional help in the subject matter. Students range in age from three years old through high school. At any given moment a typical Kumon Center provides instruction to students in a broad range of ages and abilities, from very simple instruction in beginning math and reading concepts with young (pre-kindergarten) learners, through advanced math and reading comprehension for older teenagers. For younger enrichment students, Kumon has an educational goal of having their students reach the study of Algebra by 5th grade.

Viewed from a business perspective, the Kumon franchise ranks very well in respected business periodicals such as *Entrepreneur Magazine*. The business is inexpensive to acquire and operate and has a business model that has been replicated successfully thousands of times. In recent *Entrepreneur Magazine* articles, Kumon ranks number 1 in Tutoring Service Franchises, number 4 in Fastest Growing Franchises, number 5 in Low Investment Franchises, number 10 in Top Global Franchises, and number 16 in the Franchise 500.¹

In a nutshell, franchising is a system for expanding a business and distributing goods or services and an opportunity to operate a business under a recognized brand name. A franchise occurs when a business (the franchisor) licenses its trade name (the brand, such as Kumon) to a person or group (the franchisee) who agrees to operate the business according to the terms of a contract (franchise agreement) and pays a fee for these rights. Business format franchises not only sell the franchisor's product or service, with the franchisor's trademark, but also operate the business according to the system provided by the franchisor. In the United States more than 760,000 franchised businesses generate jobs for more than 18 million Americans (nearly 14 percent of the nation's private-sector employment) and account for \$1.53 trillion in economic activity.²

KNA insists on specific requirements for potential franchisees in areas such as personality, finances, math skills, reading proficiency, and a successful background check. The mathematics program includes materials for students who are just learning to count and acquiring an initial number sense, all the way up to calculus, trigonometry and statistics that are taught traditionally at college level. It is probably not surprising that the initial requirements of math proficiency intimidate and deter many prospective franchise candidates during the application process. On the other hand, these same math

proficiency requirements play to the strength of engineering candidates, whose educational and career backgrounds demonstrate proficiency in high level mathematics.

Fifty years ago, the typical entrepreneur in the United States was relatively homogenous and static. The entrepreneur was usually a white male, sometimes working with his family, and his company focused on local goods and services. Today, America's entrepreneurs are much more diverse racially, gender-wise and age-wise; and tend towards starting service businesses. It has been projected that in 2010 more than half of all business owners will be female- or minority-owned.³ This is already a reality with the Kumon Franchisees (Fig. 3). Presently, 87% of Kumon franchisees in the United States and Canada are owned by women.

Women in general cite three common reasons for becoming entrepreneurs. The primary motivation, cited by 46% of women, is a desire to set their own hours.⁴ Another major factor is frustration with the "glass ceiling" at big companies (23%). Additionally, a number of women say they saw a lucrative niche and decided to fill it (24%). Certainly, all of three of these common motivation for an entrepreneurial career are satisfied with the Kumon business model. Since a specific Kumon Learning Center only needs to be open two days a week for three to four hours a day, a Kumon franchise gives individuals the flexibility to get gain control over their own schedule and hours. Women have proven to be very successful franchise owners. And supplemental math and reading education will continue to be an area of high demand as long as students in United States and Canada lag behind many other nations on the international benchmarks of mathematics achievement.

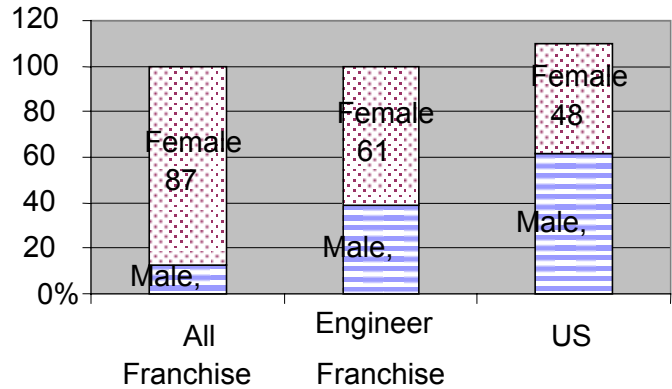


Fig. 3: Gender differences in Kumon franchisees.

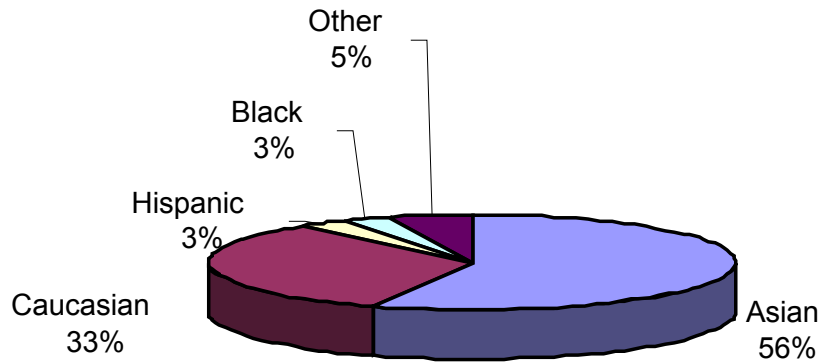


Fig. 4: Ethnicity of Kumon franchise owners

Minority owners are form a majority of Kumon Franchisees (Figure 4). In a study conducted in 2004, over 56% of the franchise owners were Asian, (the majority of those had Indian backgrounds, followed by Taiwanese, Japanese and Chinese). Of those franchisees with engineering degrees and backgrounds working in engineering industry, 82% of the franchisees are Asian. Many of these franchisees spoke of their educational experience in their native country, where demands were higher in mathematics. These franchisees see how their experience brought them opportunity and success, and enjoy seeing their own students experience the advantages of a similar approach.

The Role of the Engineer in Kumon Franchises

Entrepreneurs require foresight, energy, passion, perseverance, initiative, and drive. Research suggests that entrepreneurs across various cultures are more similar than their non-entrepreneurial counterparts across various national and cultural boundaries.⁵ Fittingly then, the ideal franchisee profile does not change in different countries because of cultural differences. Individuals who are entrepreneurially-oriented are achievement-motivated, moderate risk takers, creative, energetic, and take personal responsibility for success or failure. These entrepreneurially-oriented individuals often gravitate toward franchising rather than starting a business from scratch because franchising provides the benefits of entrepreneurship while lessening the risk by making available a tried and true methodology. Kumon franchisees have the ability to influence events within their center, but don't have complete control of events outside of their individual center.⁶

In a recent survey of Kumon North America, Inc. franchisee/instructors, it was found that many come from disciplines strong in mathematics, technical, scientific or engineering backgrounds. At least seven percent of the current franchisees have one or more degrees in an engineering field. Of the 15 major specialties recognized by professional societies, Kumon franchisees represented all areas. (Table 1).

Table 1: Distribution of Kumon franchise owners by engineering specialty		
Type of Degree	Kumon Franchisees with Engineering Backgrounds 2004	US Workforce 2000
Electrical or Electronic	29%	20%
Other	21%	12%
Mechanical	8%	15%
Chemical	5%	2%
Environmental	3%	3%
Industrial	11%	13%
Biomedical	3%	5%
Petroleum	3%	9%
Nuclear	5%	1%
Computer	5%	5%
Civil	8%	15%
Total	100%	100%

Why Engineers Choose to Become Kumon Franchisees

Common influences that cause engineers to consider any entrepreneurial career path seem to be the same factors that influence engineers to look at the Kumon franchise opportunity. Current leading factors include the dynamics of the general business outlook in North America today. Global competition is very intense and American companies are responding to the pressure through restructuring the business, mergers, acquisitions, downsizing, and “rightsizing.” All of these business strategy changes are occurring at an ever more rapid pace. So while many publications point to the critical need for engineers in the present information age, other sources like the United States Bureau of Labor Statistics predict below average career opportunities for engineers. Certainly, North American engineers will find themselves facing challenges posed by increased outsourcing and a general trend toward globalization in business. For example, in the United States there are currently 50,000 engineers graduating from college, while in China and India ten times that number are receiving degrees and are willing to provide their services at a very competitive price.

In addition to the macro forces that influence engineers toward an entrepreneurial career, there are many more personal forces. Female engineers who encounter gender bias in the workplace, for example, are excellent prospects for owning and operating a Kumon franchise. Many prospective franchisees of either gender are driven by the frustration they have felt in past employment situations where they did not have enough control of their work environment to influence the results in the manner they desired.⁷ Others are driven to franchising due to the increasing trend in large corporations to displace more experienced managers in favor of less experienced (and therefore less expensive) workers. Many are of the age where retirement is not yet possible; they would prefer to be independent rather than risk another downsizing.

Of particular interest during interviews with Kumon franchisees was their obvious satisfaction in finding a new career path that allowed them to give back to society. Involvement in the K-12 arena allows engineers to work directly with potential future engineers, and assist these students in successful preparation for academic class work in high school and college. Engineering franchises are able to retain a connection with engineering through practical application of the core of their discipline, mathematics, with their students. Showing potential future engineers the connection between the real world and mathematics, as perhaps engineering Kumon instructors can do best, is one of the finest applications of an engineering career.⁸

Many female Kumon franchisees have expressed a desire for the opportunity to assist in the reduction of the achievement gap reported for girls, who seem to fall behind their male counterparts in high school mathematics and science. Gender differences in mathematics and science career interests manifest themselves at an early age. In 1997, women represented 46% of the United States workforce, yet only 23% of the science and engineering labor force. Research involving elementary school students indicates that these students hold more stereotypical views of gender appropriateness for careers than do secondary school students.⁹ Franchises set goals with their students, particularly female students, to encourage them to take as many high school math classes as possible

because studies have indicated that women who took fewer high school mathematics classes received lower ACT mathematics scores, and had lower self-efficacy beliefs.¹⁰ Both male and female franchisees have described their pleasure in serving as role models for their students. In most Kumon Centers, enrollment is split evenly between male and female students both at the elementary and high school levels of math.

A report entitled “Engineering in the K-12 Classroom: An Analysis of Current Practices and Guidelines for the Future,” stated that 88% of teachers believe engineering is important for understanding the world around us, while only 30% of the teachers feel that many or all of their students could succeed as engineers.¹¹ Engineering requires that students are able to keep up with required mathematics courses as part of their engineering program. Individuals involved with a Kumon franchise view as part of the corporate philosophy that every child is an achiever, and if the material is presented to the student at the student’s achievement level, working on the material until mastery is achieved, any student will achieve beyond expectation. This philosophy allows students to be successful in the required mathematics, which opens a greater number of doors of opportunity in higher education, including engineering.

Franchisee/instructors have also expressed appreciation for the long-term relationship their franchise provides them with their students. The average Kumon student is enrolled in a center for over two years; some stay until the completion of the program, working through all the levels, which can mean more than a dozen years. The Kumon Franchisee/instructor also appreciates the frequent opportunities to speak to the parents of their students through semiannual conferences and, if necessary, when the parent drives the student to the center. Kumon franchises are most successful where the educational attainment level of the parents is high.

Often, engineering professionals become interested in the Kumon franchise concept because of their desire to foster greater achievement in their own children. Since franchisee/instructor’s own children are exempt from royalties, this can be a cost-effective way to benefit the franchisee’s family. In general, franchisees have found that many traditional school mathematics programs simply do not provide enough growth opportunities for their own children. Traditional school curriculums in many public and private schools are described as being more “spiral” in nature, whereas the franchisee/instructors feel the Kumon method provides greater depth and practice for students. Additionally, the curriculum is individualized so that the student can move through the Kumon mathematics levels at the just right pace and not be held back by struggling classmates. With 40 percent or more of students in North American Kumon Centers studying beyond grade level, franchisees feel that students can use their Kumon-enhanced mathematics skills to go beyond—sometimes far beyond—what is required by the state or school district. Many engineering franchisees report perfect ACT and SAT scores not only for their own children, but for many of their advanced students. Kumon franchisees derive pleasure from being part of the process in which doors of opportunity have opened for their Kumon students.

Engineering Skills—and Beyond

Effective engineers are also ideal Kumon franchise candidates. They have a broad knowledge base that encompasses political, environmental, business and community areas in addition to technical knowledge. They also have leadership skills, judgment, the ability to handle pressure, calmness in a crisis, and enjoyment of challenges.¹² In franchising, as in engineering, it is important for the franchisee's success to be a team player, but also to be self directed. Franchisees need to be good listeners and empathic, being able to predict what their students or the students' parents expect and how they will react. Good managers are able to praise innovators or students whose ideas did not pan out, highlighting what has been learned in the process. This type of feedback is essential for the success of the Kumon student. Entrepreneurs are social creatures. Building a company entails hiring, organizing, and inspiring others; not necessarily the qualities seen in iconoclasts.¹³ Entrepreneurs are skilled at using their time to develop relationships with people who are crucial to the success of their venture. In the Kumon Center, that will include the staff, the students, the student's parents, and others who are influential in education, such as teachers, social workers, and pediatricians. As franchises grow, the franchisee must develop networks with banks, lawyers, accountants and other influential individuals and entities. Franchisees must constantly work at developing and maintaining the relationships that enable their Kumon Center to obtain information, legitimacy, and the help needed for their Center to grow and flourish.

Conclusions

At least 7% of all Kumon franchisees have a bachelor or higher degree in engineering. Many engineers choose a Kumon franchise career because it plays to their solid strengths in mathematics and provides for flexible working hours. It also provides for independent control of the career path at a time when many companies are downsizing and transitioning their engineering staff. Engineer franchisees find the Kumon method of learning mathematics benefits not only their own children, who often obtain outstanding scores on important pre-college examinations, but also the children of many of those who attend the franchisee's Kumon center. Engineers also find great satisfaction in sharing their knowledge of the real-world applications of mathematics with their students. Overall, a Kumon franchise appears to offer an ideal opportunity for an engineer interested in financial independence through entrepreneurship and education

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Appendix A: Worksheet Level Outline

WORKSHEET LEVEL OUTLINE

7A	Counting. This level aims to thoroughly familiarize the student with numbers through counting and tracing.
6A	Reading numbers. Level 6A enables the student to read numbers up to 30 and broadens his/her understanding of the order of numbers.
5A	Drawing Lines, Reading Numbers, Reciting Numbers. Level 5A enables students to read numbers up to 40 and recite numbers up to 50. Upon completion of this level, students will also be able to demonstrate pencil control when drawing lines.
4A	Writing Numbers. Level 4A develops the students' ability to see the sequence of numbers from 1-220. This level also enables the student to write numbers in the correct way and is helpful for learning addition.
3A	The aim of level 3A is to enhance the students' number writing skills and to introduce the mental addition of numbers from 1 to 5.
2A	In this level develops student's skills in the addition and subtraction of numbers up to 10.
A	Level A focuses on the development of mental addition skills. The student's ability to mentally calculate, will be used in each area of Math in the future.
B	The aim of Level B is for students to develop skills in written addition and subtraction using the mental calculation skills learned throughout Levels 3A-A.
C	Multiplication and Division. Level C enables students to memorize the 2-9 multiplication tables, multiply by 1 digit numbers and divide by 1 digit numbers and find the remainders.
D	Division by 2- Digit Numbers and Introduction to Fractions. This level enables students to perform long multiplication and long division, rewrite improper fractions as mixed numbers and reduce fractions.
E	The Basics on Calculating Fractions. Level E enables students to add, subtract, multiply and divide fractions and decimals. When students complete this level they will be able to rewrite fractions as decimals and vice versa.
F	Mixed Four Operations With Fractions and Decimals. Level F concludes the study of arithmetic and acts as a springboard to algebra. This level enables students to - calculate a mixture of the four operations with fractions and decimals; - calculate the four operations with decimals including vertical calculation; - solve word problems using the concept of fractions.
G	Level G introduces students to basic algebra. Upon completion of this level, students will be able to calculate positive and negative numbers, simplify basic algebraic equations and solve one variable linear equations.
H	Simultaneous Linear Equations and Functions. Level H enables students to - solve simultaneous linear equations; - work with linear functions on the number plane; - simplify monomials and polynomials.
I	Factorization, Square Roots and Quadratic Equations. Level I will help students develop higher mathematical skills. When students finish this level, they will be able to - factorize polynomials; - calculate with square roots; - solve quadratic equations; - work with linear functions on the number plane; - use the Pythagorean theorem.
J	Expansion of Polynomial Products and Factor Theorem
K	Quadratic Functions, Fractional Functions, Irrational Functions, Trigonometric Functions and Exponential Functions
L	Trigonometric Theorems, Tangent Lines of Circles, Equations of Straight Lines, Quadratic Curves
M	Arithmetic Sequences, Differential and Integral Calculus
N	Surface Vectors, Coordinates in Space, Equations of Lines and Planes, Matrices
O	Infinite Geometric Series, Limits of Functions, Differentiation, Applications of Differential Calculus
P	Indefinite Integrals, Definite Integrals and Differential Equations
Q	Permutations, Combinations, Binomial Theorem, Statistics

Appendix B: Typical Kumon worksheet at Level A

A 200b

(13) $14 - 9 =$

(14) $18 - 12 =$

(15) $17 - 15 =$

(16) $15 - 7 =$

(17) $20 - 14 =$

(18) $19 - 13 =$

(19) $16 - 8 =$

(20) $18 - 11 =$

(21) $20 - 17 =$

(22) $15 - 10 =$

(23) $19 - 12 =$

(24) $17 - 16 =$

(25) $20 - 19 =$