

**Demand Proposal of
Specialized Training System in
Computer Class for
the Elderly and Disabilities**

by
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Foreword:

Seniors older than 65, are in computer crisis. Born before 1946, they do not receive a chance to learn computers at school. These days seniors are hard to stand on own legs with social services because many services are provided with Information Technology (IT) and they are expanding in numbers and depth everyday.

In order to maintain maximum independence and to prevent premature or inappropriate institutionalization which increases the public expenditures, retired seniors should feel comfortable with computers.

Adult day care centers and senior centers are gaining attention for the computer class as a part of adult education. I have learned that retired seniors show idiosyncrasies in a computer class and come to need the specialized training system

This document is written to appeal the needs of special training system in a seniors' computer class. The system, tentatively named Q-system, has a big market such that 4,600 adult day care centers and 11,000 senior centers nationwide.

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1. Letter from Ms. Surya

Following is the letter from Ms. Surya, the senior in my computer class.

February 27, 2012

TO WHOM IT MAY CONCERN,

It gives me great pleasure to give this letter of recommendation for Mr. Sun K. Kim of All That Corp (<http://autophp.com>).

I am an Indian American senior who has severe deafness. I met Mr. Kim for the first time when my husband and I became members of Queensboro Adult Day Care Center in 2011. Mr. Kim was our computer teacher.

Mr. Kim taught basic internet skills to twelve seniors who had very little knowledge of computers. Despite the use of hearing aids, it was very difficult for me to understand more than 10% of his lectures.

After two months I became so disappointed and heart-broken that I thought of quitting the computer class. Mr. Kim persuaded me to stay in the class. He took permission from the management to conduct one-on-one sessions with me.

Then I had another problem. I was forgetting things very often. When I mentioned this to Mr. Kim he was not discouraged. He painstakingly wrote all instructions in my notebook step by step during each session. It helped me a lot.

Thanks to his kindness, patience, hard work, and systematic approach I was able to access internet and set up a personal e-mail account. A couple of weeks later I could independently surf the internet and compose/send e-mails with ease.

My life has greater meaning now that I am able to communicate with my family in India and friends online and research topics of interest without ever leaving home.

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Two months ago when I was frying some frozen snacks, they exploded on my body and I experienced burns on my face, arm, and chest. Immediately I rushed to look in our medicine cabinet for an ointment for burns but it was finished!

I checked the internet and found a home remedy for large burns using egg whites and applied it. It gave me great relief! Many hours later I got an ointment from the pharmacy and applied it also.

After four weeks all but three of the burns healed without leaving scars. Overwhelmed with gratitude, I e-mailed a letter to Mr. Kim and thanked him.

Mr. Kim gave me an invaluable gift, one I could not obtain from family or friends.

Given all I have endured I want to emphasize Mr. Sun K. Kim is a very kind and dedicated instructor who has passion for his students. He goes above and beyond his duties to ensure they understand his lessons. I believe Mr. Kim will be a great asset to any company that employs him. I wish him success in all of his future endeavors.

Sincerely,

Prabha Surya

2. Background

Worked for Queensboro Adult Day Care Center (QADC, <http://qdaycare.com>) for 12 months as a teacher, I had met many senior members older than 60 in ages in computer classes.

As their intelligent abilities deteriorated, the seniors look to struggle to survive by learning the computer skills. They know well, the computer skills could help them in various aspects of daily life. The purpose to learn computer skills is, in other words, to stand on their own feet to give their loved ones a chance to have a much needed break to rest.

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In practice, even though teachers and students of computer classes are eager to teach and learn knowledge and skills, many seniors could not stay in right track. It probably results from the lack of well arranged curriculum and systems in senior education field.

At first time, I surveyed Internet to find any formal educational methodology or dedicated tools for senior members, but failed. Then I turned my eyes to other senior centers to know that they are interested in not education but institutionalization. Another senior center in Woodside, New York I visited just provides members with a small space and a few computer systems to be shared. They do not have a sort of class or curriculum.

In this document, “seniors” refer to the elderly persons in adult day care centers or senior centers, older than 65 in ages or persons with disabilities.

3. Introduction

Many of the seniors show unique idiosyncrasies in mental and/or physical conditions. Through my experiences from 2010 to 2011 in an adult day care center, I learned that seniors’ educational needs are in dark corners of our adult education system.

Even though adult day care centers and senior centers are equipped with computer systems and Internet facility, and technical persons assigned to lead or teach the seniors, I believe, the practical approaching methodology is additionally required to fulfill the seniors’ requirements.

Seniors’ training would be ineffective without the right methodology, because the seniors are showing very unique challenges in a class. So I would like to propose new methodology of my own and computerized system to the public.

In this report, the ideal methodology is named “Q-method”.

4. Purpose

This document is written to appeal the demand of special approach for seniors' computer training, and give shape to the Q-method roughly.

If positive responses come to this proposal, then in next stage in a near future, the tangible software system, tentatively named Q-system, is to be developed to serve the nationwide adult day care centers and senior centers.

5. Internal Challenges of Seniors in Computer Class

- 5.1 Bad attendance due to health problem
- 5.2 Poor vision
- 5.3 Hearing defect
- 5.4 Shaking hands
- 5.5 Memory failure
- 5.6 Degraded intellect

6. External Challenges to Seniors

- 6.1 Media changing
 - Movie theatres disappearing; Computer takes family at home; E-book expanding fast;
 - Newspapers will stop printing someday
- 6.2 Most services shift to IT
 - Email, Banking, Shopping, Order, Reading, Finding way, Recruiting, Reservation,
 - Learning, News, Photo, Music, Movie, Circles, Politics
- 6.3 Seniors not recognized as an IT neighbor
- 6.4 Computers not shared among family; No personal computer retained
- 6.5 Communication cut off in online mode
- 6.6 No remedy for serious marginalization

7. Seniors' Crisis with Computer

In our social perception, seniors are somewhat regarded as groups who require no more development of skills. After retirement actually, it is common that most of seniors are content with the status quo in skills.

However, it is quite another story in computer world. It's very hard for seniors to maintain the status quo in services related with information technology (IT).

Most seniors born before 1946 had no formal chance to get trained with computers, while current daily life is getting integrated with computers as seen in the paragraph 6.2. From this gap, seniors without computer skills are exposed to the crisis. Now computer illiteracy is threatening seniors' dignity and rights as a matter of course.

Further, this class of seniors is incurring the great social cost. If they do not stand on their own feet in daily life, big cost is to be imposed on the beloved family members. If the family gives up on their parent earlier than expected, then great expenditures will be a burden to the institutional facilities asking funds to society or government.

8. How to Overcome the Crisis

Why should we teach seniors computer skills?

Here is a metaphor! It is same to swimming. If someone does not swim in a river, he/she will be drowned. If a senior does not know how to swim, it is natural for us to teach them how to swim or give him/her a boat to depend on.

It is the reason for us to support seniors to learn computer skills and to stand on their own feet like Ms. Surya. It is one of the shortest cut to save our social expenditures.

To analyze the training environments in detail, let's take a look at the five roles proposed by Dr. Sharan Merriam [1], that is, "1. Create space and listen to voices", "2. Adopt a critical stance", "3. Attend to policy", "4. Develop partnerships" and "5. Foster collective learning and action".

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Dr. Merriam is a professor in Adult Education at University of Georgia. The five roles are developed to suggest the beneficial and enriched learning environments in field of adult education. And seniors' computer training also falls in this field.

The first two roles show positive signs in adult day care centers. Center operators begin to allocate space and invite students. So, the first role looks to be fulfilled autonomously. For a sense of crisis, with news media's warning and seniors' awareness, the critical stance is considerably built up over the communities.

Thirdly policy! Policy dedicated to seniors' IT training is not yet formally established and it still remains in public consensus phase. It is the time to create perspectives in computer training for seniors and incarnate as a policy as well as a methodology.

Partners! Adult day care centers and senior centers are to be good partners with many benefits and few drawbacks. These centers can gather members, advocate training for seniors and provide administration facility. Plus, digital photo clubs, digital classic, movie or any other practical clubs would be a great help in seniors' computer experience. Digital copyrights and streaming services are requested to make a special discount rate for senior clubs.

Finally collective learning! For adult day care centers and senior centers could be financially controlled by the healthcare system like Medicaid / Medicare, the training collaborations could be prescribed mandatory that may lead to discussions and knowledge exchange.

In summary, five roles are in mature age in seniors' computer training. A few supports to above mentioned ideas may lead the training to the success. They may happen sequentially or in parallel. Among them, the big pending tasks are "Policy" and "Foster collective learning and action" which need administrative driving powers.

To pursue the collective learning, standardization and commercialization should be followed to improve the ecosystem of education. For standardizations of the training courses, above mentioned idiosyncrasies have to be scrutinized further.

9. Special Considerations in Seniors' Computer Class

As seen in chapter 5, seniors show unique idiosyncrasies in mental and physical conditions. And they are not negligible factors in computer classes. They could be a danger to classes. Followings are special considerations on these issues.

9.1 Bad attendance due to health problem

Because of low attendance rate, steep learning curb should be avoided. Back-down is not uncommon in seniors' class. Frequent evaluation of student's skill is required to adjust the student's progress dynamically. Personalized progress management is absolutely required.

9.2 Poor vision

Most seniors complain of their difficulties in reading. So the reading material should use the letter fonts as big as possible. Or teachers could read the material on behalf of the student. The wide employment of automatic magnifying functions in not only text but also images may enhance the readability on the screen.

9.3 Hearing defect

Sound assistance is applicable only to limited range of students. In addition to acoustic sound, visional signs would be better to be mixed for warning messages.

9.4 Shaking hands

Seniors have problems in moving the mouse device precisely especially in beginner's class. Keyboard oriented applications are helpful for the beginners. And the double click should be avoided in beginner's class.

9.5 Memory failure

Seniors have a limitation in memory capability. Inculcations are ineffective. Rather, special emphasis should be given to enough practice hours.

9.6 Degraded intellect

Due to the deteriorating intellect, typical amount of instructions are not acceptable by seniors. So it is desirable to keep the lecture hours very short. The careful and frequent placement test is required and maintaining small study group is necessary. Individual intellectual information could be taken from a nurse.

10. Q-method

Solutions mentioned in above chapter shall be the cornerstones of Q-method. Q-method is expected to comprise 3 subordinate parts of

- Curriculum and teaching method for seniors;
- Policy to improve the seniors' computer education;
- Software system, tentatively named Q-system;

For Q-method could be a catalyst for seniors' educational standard establishment, early development of Q-method is desirable.

In curriculum and teaching method development, following 3 teaching tracks are proposed here.

- Track-I: Teaching in a computer class;
- Track-II: Teaching in a group;
- Track-III: One-to-one teaching;

“Teaching in a class” means the traditional teaching practice. On this track, we can enjoy the fastest progress in training and usually the head group of students belongs to this track.

“Teaching in a group” is a remedy for students in need of heavy exercise to master the learned skills. Many seniors are likely to fall in this category.

“One-to-one teaching” is the last but not least remedy for seniors with difficulties in hearing or memorizing. This group of senior is not a few in adult day care facilities. With some allocation of educational resources, they can happily erect themselves on the ground of up-to-date computer life.

For a reference, the letter of chapter 1 was sent by a handicapped Indian American senior who got a B.A. degree from an Indian university 40 years ago.

To implement these versatile teaching approaches, the curriculum should include the 3 tracks of course on the same subject, and allow the student to hop between the tracks or to back down on the progress if needed.

Due to the vastness of this issue, the study on policy is left to adult educators for their future proceedings.

11. To Spawn the Q-system

When is the best time to develop Q-system? I believe that concurrent development of Q-method and Q-system is the best to exploit the benefit of mutual feedback. Today in software engineering world, even though everything is not fully analyzed, we can start the software project using the agile methodology based on iterative and incremental development.

To carry out this idea, Q-system should be developed and applied to a computer class in an adult day care center. Through the iterative improvement of functions, Q-system shall be refined and enriched in its services. In real world, however, it is not easy to find such kind of ideal environments.

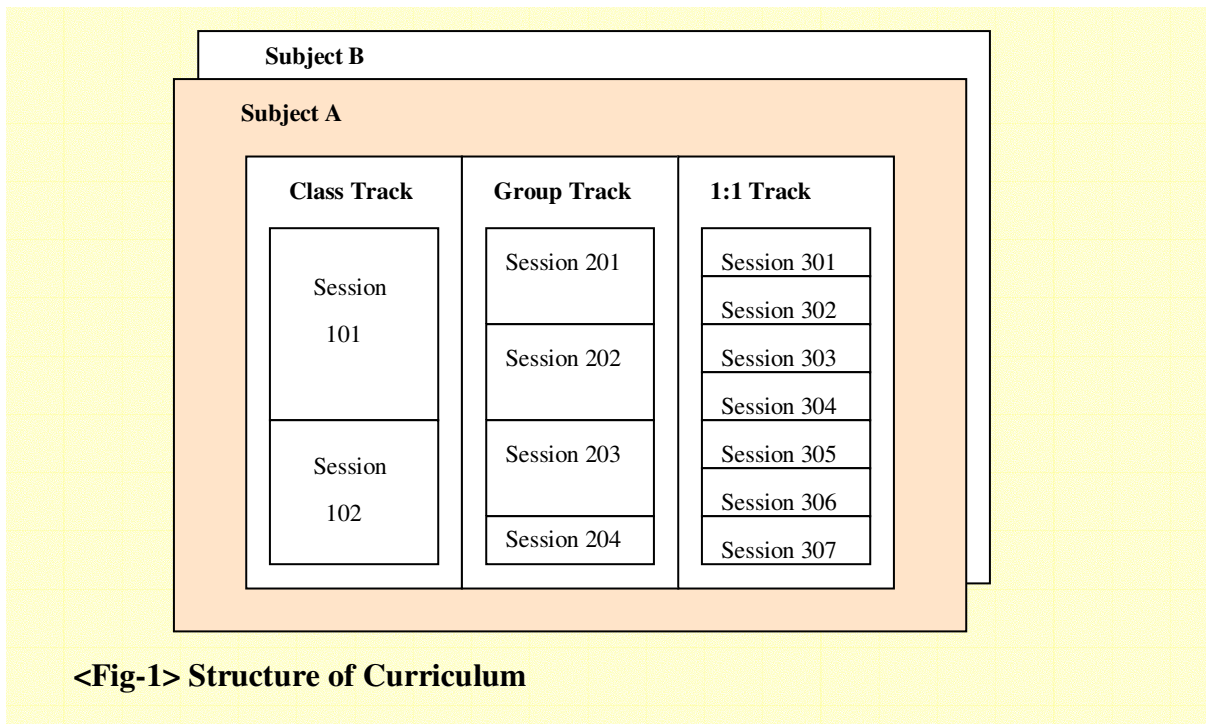
On the other hand, the pilot Q-system implementation may help adult educators to align the service levels and enable early grasp of potential problems. Then their feedback could help Q-system to take shape in detail.

It could be a sort of chicken-or-egg riddle. In next chapter, therefore, the primitive frame of Q-system is given.

12. Curriculum Structure

To get the best effect, our curriculum system is broken down as 3 layers. Top layer is a subject which is same as traditional system. The 2nd layer is a track which changes only teaching style, not the contents. The lowest layer is a session which is the basic unit of curriculum.

The hierarchy is given in <Fig-1>. For example, a student may take session 101, 203 and 307 to finish the subject A



13. Q-system

From the conceptual requirements analysis, in its beginning phase, Q-system will include 3 subsystems as follows,

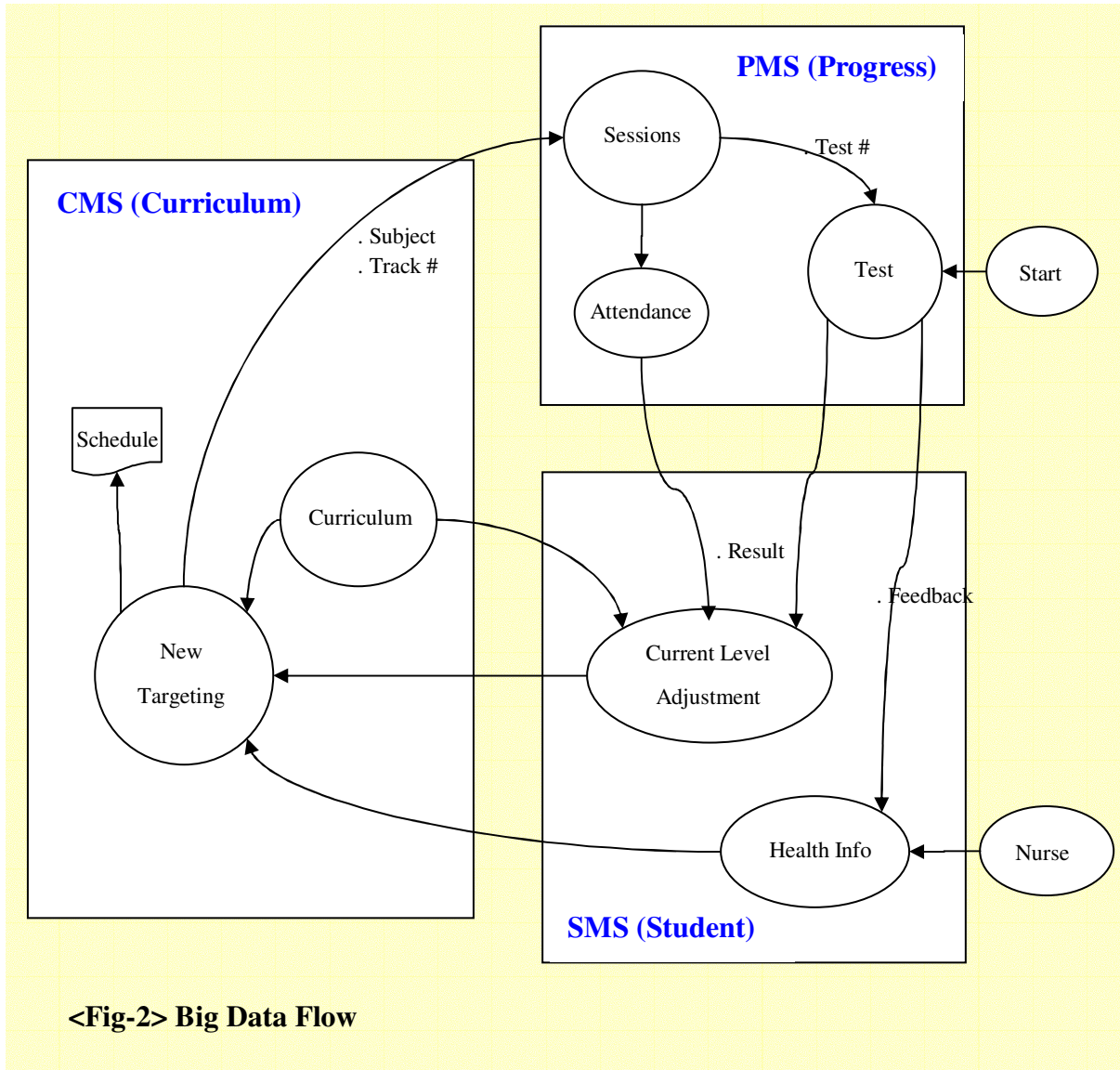
- Curriculum Management Subsystem (CMS);
- Student Management Subsystem (SMS);
- Progress Management Subsystem (PMS);

In <Fig-2>, big data flow among subsystems is given. “Curriculum Management System” holds all information about the curriculum and its subordinates, for instance, subjects, tracks and sessions. The “New Targeting” function collects all information about a student to make a decision if a change of track is necessary or not.

One of the main features of Q-system is the frequent practice of test. The test result from “Progress Management Subsystem” may lead to the stage of “Current Level Adjustment” with no regard that it is positive or negative. With the test result, a student may be upgraded or downgraded in a course of Q-system. This kind of approach can minimize the possible gap between the training goal and student’s status.

Sometimes, a student does not attend because of the hospital schedule. In that case also, “Current Level Adjustment” may be required after the test.

If the nurse gives a notice that student’s health deteriorates, then the student may require the change of the track. These kind of chained activities are too cumbersome to perform without computer system’s aids.



14. Expected Effects

Followings are the expected positive effects of the Q-system launching,

- To minimize the stray students;
- To convince seniors of the independence;

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- To provide seniors with the personalized Computer Aided Instruction (CAI) power;
- To get marginalized seniors back in the right track;
- To accumulate of adult educational knowledge;
- To incarnate the teaching assistant system;
- To expedite the policy making;
- To expand the Q-method to overall education territory;
- To expand the seniors' IT market;
- To create jobs in field of adult computer education;

15. Next Step

According to the “Help guide” at <http://helpguide.org>, there are more than 4,600 adult day care centers nationwide as of 2010 [3]. By the fact sheet from the “National Council on Aging” at <http://ncoa.org>, nearly 11,000 senior centers serve 1 million older adults everyday [4].

To make the distribution easy, all solutions are to be developed as a web service. Using the Internet technology, most geographical difficulties could be easily overcome.

And the service may be delivered to users as Software-As-A-Service (SaaS) style which does not sell software, but get paid by usage. Permitted as mandatory subscription, the flat rate system could accelerate the service of Q-system quickly.

Get trained to use the Q-system, computer teachers or leaders could help seniors effectively.

16. References

[1] Merriam, S. B., Courtenay, B. C., and Cervero, R.M., “Global issues and adult education: Perspectives from Latin America, South America, and the United States”, Jossey Bass, 2006

[2] Texas Human Resource Code, Title 6, Chapter 103: Adult Day Care at <http://dads.state.tx.us>

[3] Metlife Mature Market Institute, “The Metlife National Study of Adult Day Services”, 2010

[4] National Council on Aging (<http://ncoa.org>), “Senior Centers: Fact Sheet”, 2012