

# LEARNING BEHAVIORS RELATED TO DEAF STUDENTS' SUCCESS IN COLLEGE

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## Abstract.

Some deaf students who have basic level reading and writing skills upon entry to college are successful and graduate and others are not. Summers (2003) reported that learning behaviors and study habits exhibited by hearing students provide useful information relative to college persistence. We do not have similar information relative to deaf students' success. This article presents data describing three in-class and three out-of-class learning behaviors of 134 first-year deaf college students enrolled in basic-level English reading and writing courses. The in-class behaviors included class attendance, attentiveness, and participation; the out-of-class behaviors included completing assignments, using tutorial support, and doing optional work. The data for these six behaviors were studied to determine their relationships to these students' persistence in college after three to five years. Students who had graduated or were still registered in college after three years were those who were already practicing strong study skills and habits in their first year. This finding has implications for fostering the development of these skills before deaf students enter college and very early in their college careers.

Key words: deaf students; college retention; learning behaviors.

**Chinese**

[Translation Shek Kam Tse]

具備基本閱讀和寫作能力的聾啞學生在初入大學的時候是成功的，但是畢業的時候或其他的時候則不是。Summers

(2003)報告中提到了正常聽力學生的學習行為和學習習慣有助於大學持續性的相關資訊，但是我們沒有關於聾啞學生成功的資料。這篇文章提供的資料描述了134個一年級聾啞學生在基本閱讀和寫作課上的三種課上和三種課後的學習行為，其中課上行為包括出勤、注意力和參與度，而課後行為則包括完成作業、利用輔導課和完成額外工作。這六種行為的資料用於研究4、5年之後它們與這些學生持續在校之間的關係。已經畢業或者三年之後仍然在校的學生是那些在第一年已經獲得了很強的學習能力和學習習慣的學生。這個發現提示了應該在聾啞學生進入大學之前或者在進入大學初期進行這些能力的培養和發展。

**關鍵字：**聾啞學生、大學持續、學習行為

**Dutch**

[Translation Tanja Janssen]

TITEL. Leergedragingen van dove studenten in relatie tot hun studiesucces

SAMENVATTING. Sommige dove studenten die zwak zijn in lezen en schrijven bij hun entree in het hoger onderwijs zijn niettemin succesvol en studeren af, terwijl anderen dat niet lukt. Summers (2003) rapporteerde dat leergedragingen en studiegewoonten die horende studenten vertonen nuttige informatie geven die gerelateerd is aan studievoldharding. We beschikken niet over gelijksoortige informatie ten aanzien van dove studenten en hun studiesucces. In dit artikel worden gegevens gepresenteerd over drie leergedragingen tijdens lessen en drie leergedragingen buiten de les van 134 dove eerstejaars collegestudenten die deelnamen aan basiscursussen Engelse lees- en schrijfvaardigheid. Tot de leergedragingen in de les behoorden aanwezigheid, aandachtigheid en deelname; leergedragingen buiten de les waren: het uitvoeren van opdrachten, gebruik maken van begeleiding, en facultatieve opdrachten uitvoeren. De data voor deze zes gedragingen werden bestudeerd om vast te stellen wat hun relatie is met het volharderen van deze studenten in college na drie tot vijf jaar. Studenten die afstudeerden of nog ingeschreven waren in college na drie jaar waren studenten die in hun eerste jaar al over sterke studievoldharding en –gewoonten beschikten. Deze bevinding heeft implicaties voor het bevorderen van de ontwikkeling van deze vaardigheden al voordat dove studenten aan college beginnen en in de allereerste jaren van hun studie.

TREFWOORDEN: dove studenten, uitval uit college, leergedragingen

**French**

[Translation Laurence Pasa]

TITRE. LES CONDUITES D'APPRENTISSAGE FAVORABLES A LA RÉUSSITE DES ÉTUDIANTS SOURDS A L'UNIVERSITÉ

RÉSUMÉ. Certains étudiants sourds, maîtrisant les compétences de base en lecture et en écriture à l'entrée à l'université, réussissent et obtiennent leur diplôme tandis que d'autres échouent. Selon Summers (2003), l'étude des comportements et des habitudes d'apprentissage chez des étudiants entendants fournit des informations utiles quant à la persévérance à l'université. Or, nous n'avons pas d'information semblable concernant la réussite des étudiants sourds. Cet article décrit trois conduites d'apprentissage en classe et trois autres hors classe chez 134 étudiants sourds de première année inscrits dans un cours d'anglais de niveau initial. Les conduites observées en classe portent sur la présence, l'attention et la participation, les conduites hors classe renvoient à la réalisation de devoirs, à l'utilisation de supports de cours et au travail facultatif. Ces six comportements ont été étudiés afin de déterminer leurs relations avec la persévérance de ces étudiants après trois à cinq ans passés à l'université. Les étudiants ayant obtenu un diplôme ou qui sont toujours inscrits à l'université trois ans après sont ceux qui, dès la première année, avaient développé des compétences et des habitudes d'apprentissage solides. Ce résultat incite à favoriser le développement de ces compétences chez les étudiants sourds avant qu'ils n'entrent à l'université et très tôt dans leurs cursus universitaires.

MOTS-CLÉS : étudiants sourds, assiduité à l'université, conduites d'apprentissage.

**German**

[Translation Ulrike Bohle]

TITEL. Beziehung zwischen Lernverhalten und Studienerfolg gehörloser Studierender

ZUSAMMENFASSUNG. Während einige gehörlose Studierende zu Studienbeginn über grundlegende Lese- und Schreibfertigkeiten verfügen, ihr Studium erfolgreich durchlaufen und abschließen (graduieren), gelingt dies anderen nicht. Summer (2003) zeigte, dass Lernverhalten und Studiergewohnheiten von hörenden Studierenden einen nützlichen Hinweis auf die Ausdauer im Studium geben. Vergleichbare Informationen über gehörlose Studierende fehlen bislang. In diesem Artikel werden Daten zu drei Lernverhaltensweisen im Klassenraum und drei Verhaltensweisen des Selbststudiums von 134 gehörlosen College-Studierende im ersten Studienjahr, die an Grundkursen Englisch Lesen und Englisch Schreiben teilnahmen, präsentiert. Verhaltensweisen im Klassenraum umfassen Teilnahme, Aufmerksamkeit und Beteiligung; das Selbststudium beinhaltet die vollständige Erledigung von Arbeitsaufträgen, Teilnahme an Tutorien sowie die Bearbeitung optionaler Aufgaben. Diese Verhaltensweisen wurden mit Bezug auf den Verbleib am College nach drei bis fünf Jahren ausgewertet. Studierende, die nach drei Jahren graduiert oder weiterhin eingeschrieben waren, zeigten bereits im ersten Studienjahr starke Studierfertigkeiten und -gewohnheiten. Diese Ergebnisse haben Implikationen für eine Förderung dieser Fertigkeiten von gehörlosen Studierenden vor Collegeeintritt und zu Beginn ihrer Collegelaufbahn.

SCHLAGWORTER: Gehörlose Studierende, Verbleib am College, Lernverhalten

**Italian**

[Translation Manuela Delfino, Francesco Caviglia]

TITOLO. Comportamenti di apprendimento e successo degli studenti sordi al college.

SOMMARIO. Una volta entrati all'università, alcuni studenti sordi dotati di competenze di base di lettura e scrittura ottengono buoni risultati e si laureano, altri no. Secondo Summers (2003) i comportamenti di apprendimento e le abitudini di studio mostrati dagli studenti udenti forniscono informazioni utili relative alla permanenza nel college. Non abbiamo informazioni simili rispetto al successo di studenti sordi. Questo articolo presenta i dati che descrivono tre comportamenti di apprendimento a lezione e tre comportamenti fuori dalla lezione da parte di 134 studenti non udenti del primo anno di università, iscritti ai corsi di livello base di lettura e scrittura dell'inglese. I comportamenti a lezione comprendono la frequenza, l'attenzione, e la partecipazione; quelli fuori dalla lezione comprendono il portare a termine i compiti, l'utilizzo del supporto di tutorial, e lo svolgimento di attività facoltative. I dati relativi a questi sei comportamenti sono stati studiati per determinare le loro relazioni con la permanenza di questi studenti all'università, dopo tre-cinque anni. Gli studenti che si sono laureati o che erano ancora iscritti all'università dopo tre anni sono stati quelli che stavano già mettendo in pratica solide capacità e abitudini di studio durante il loro primo anno. Questi risultati implicano la necessità di favorire lo sviluppo di queste abilità prima che gli studenti non udenti entrino all'università e nei primi stadi del loro percorso universitario.

PAROLE CHIAVE: studenti non udenti; permanenza nel college; comportamenti di apprendimento.

**Polish**

[Translation Elżbieta Awramiuk]

TITUL. Sposoby uczenia się a sukces niesłyszących studentów podczas studiów

STRESZCZENIE. Spośród studentów niesłyszących, którzy zdając na uczelnię, wykazują podstawowe umiejętności czytania i pisania, niektórzy osiągają sukces i zostają absolwentami, a inni nie. Summers (2003) relacjonował, że sposoby uczenia się i nawyki w tym względzie ujawniane przez studentów słyszących stanowią istotną informację na temat ich utrzymywania się na uczelni. Nie mamy podobnej informacji na temat sukcesów studentów głuchych. Artykuł prezentuje dane opisujące trzy sposoby dotyczące uczenia się w klasie i trzy sposoby dotyczące uczenia się poza klasą 134 niesłyszących studentów pierwszego roku zapisanych na kurs podstawowy czytania i pisania w języku angielskim. Zachowania dotyczące uczenia się w klasie obejmują uczęszczanie na zajęcia, koncentrację i uczestnictwo, a zachowania pozaklasowe – odrabianie prac domowych, korzystanie ze wsparcia tutora i wykonywanie zadań fakultatywnych. Dane dotyczące sześciu zachowań były analizowane pod kątem ich związku z sytuacją studentów na uczelni po trzech / pięciu latach. Ci, którzy po trzech latach skończyli studia lub ciągle studiowali, byli tymi, którzy już na pierwszym roku z zaangażowaniem ćwiczyli swoje umiejętności i nawyki uczenia się. Te dane wskazują na zasadność rozwijania wskazanych umiejętności przed zdawaniem uczniów niesłyszących na studia i na samym początku ich uczelnianej kariery.

SLOWA-KLUCZE: studenci niesłyszący; utrzymywanie się (trwanie) na uczelni wyższej; sposoby uczenia się

#### Portuguese

[Translation Sara Leite]

TÍTULO. Comportamentos de aprendizagem relacionados com o sucesso escolar de alunos surdos

RESUMO. Alguns alunos surdos que possuem competências básicas de leitura e escrita quando ingressam no ensino superior são bem sucedidos e terminam o curso, enquanto outros não. Summers (2003) refere que os comportamentos de aprendizagem e os hábitos de estudo de alunos ouvintes fornecem informação relevante no que respeita à persistência no ensino superior. Não existe informação equivalente relativamente ao sucesso de alunos surdos. Este artigo apresenta dados que descrevem três comportamentos de aprendizagem de sala de aula e três comportamentos de aprendizagem fora de sala de aula, de 134 alunos surdos do primeiro ano do ensino superior em disciplinas de leitura e escrita em Inglês, de nível elementar. Os comportamentos de sala de aula incluíram a assistência às aulas, a atenção e a participação; os comportamentos fora de sala de aula incluíram a elaboração de trabalhos, o recurso ao apoio tutorial e a concretização de tarefas opcionais. Os dados relativos a estes seis comportamentos foram estudados no sentido de determinar as suas relações com a persistência dos estudantes no ensino, após três a cinco anos. Os alunos que se formaram ou que ainda frequentavam o ensino superior após três anos eram os que já exibiam fortes competências e hábitos de estudo no primeiro ano. Esta descoberta tem implicações na promoção do desenvolvimento dessas competências antes de os estudantes surdos ingressarem no ensino superior e no início da sua carreira académica.

PALAVRAS-CHAVE: Alunos surdos; retenção no ensino; comportamentos de aprendizagem.

#### Spanish

[Translation Ingrid Marquez]

TÍTULO. Conductas de aprendizaje relacionadas con el éxito de los estudiantes sordos en la universidad

RESUMEN. Algunos estudiantes sordos que tienen habilidades básicas en la lectura y escritura tienen éxito al empezar la universidad, mientras que otros no. Summers (2003) reportó que las conductas de aprendizaje y los hábitos de estudio demostrados por los estudiantes sin discapacidad auditiva arrojan información útil relativa a la capacidad general de asistir a la universidad. Sin embargo, para los estudiantes sordos no tenemos datos semejantes. Este artículo presenta la descripción de tres conductas de aprendizaje adentro del salón de clase y tres más afuera para 134 estudiantes universitarios sordos durante su primer año, todos inscritos en cursos de lectura y redacción en inglés. Las conductas en el salón de clase incluyeron la asistencia, atención prestada y participación; las conductas fuera de clase incluían cumplir con las tareas asignadas, usar el apoyo de tutorías y hacer trabajos optativos. Los datos sobre estas seis conductas se estudiaron para determinar qué relación tenían con la persistencia en la carrera después de tres y cinco años. Los estudiantes que se habían graduado o que seguían registrados en la universidad después de tres años solían ser los que ya tenían las habilidades de estudio fuertemente arraigadas durante su primer año. Este resultado tiene implicaciones porque muestra la importancia de fomentar el desarrollo de estas habilidades antes de que los estudiantes sordos entren a la universidad, y seguir las fomentando en la etapa temprana de sus estudios universitarios.

PALABRAS CLAVE: estudiantes sordos, persistencia en la universidad, conductas de aprendizaje.

## 1. INTRODUCTION

Faculty, tutors, and program directors anticipate that some students will succeed in college and others will not, but it is often difficult to predict success especially for deaf and hard-of-hearing students who have not developed basic reading and writing skills (Lang, 2002). College programs attempt to fine tune the selection process to maximize the persistence rate of students who are accepted by requiring students to submit with their application things such as college entrance examination scores, high school transcripts, letters of recommendation, extracurricular activity participation. Still the dropout rate is often higher than desirable, especially among the stu-

dents who do not arrive in college with good reading and writing skills (Nora, Barlow, & Crisp, 2005).

College faculty have strong intuitions about what is needed for success, and often after several weeks of working with a student can make reasonably good predictions about the chances of that student's success in college (Bensimon, 2007). This chance for success is not predicated on intelligence, but on the student's behaviors and attitudes toward learning (Summers, 2003; Bippus, Kearney, Plax, & Brooks, 2003; Larose, Robertson, Roland, & Legault, 1998). However, students may not know what they need to do to be successful in college. When students are asked what they need to do to be successful, they typically indicate that they need to get good grades on assignments and they need to attend class; the students do not specify the behaviors needed to get good grades other than attending classes (Conley 2005). When Eilers-crandall (2008) asked deaf students this question in a journal assignment, the deaf students also most often replied that that they needed to attend class and needed to get good grades.

Educators and counselors generally agree that students who have developed good study skills and habits have a higher probability of success in college than their classmates who have not done so (Saxon, Sullivan, Boylan, & Forrest, 2005; Gebelt, Parilis, Kramer, & Wilson, 1996). Educators describe these desirable skills and habits to include characteristics such as: attending class regularly, being on time, paying attention, informing the instructor in advance when unable to attend, finding out what was missed and learning this information, completing all regular assignments and also any extra credit work available, asking pertinent questions in class, meeting with their instructors to get information about their grades and their work, and caring about work so it looks good when it is turned in (Fike & Fike, 2008; Warner, 2005; Cuesta College, 2003). In other words, the successful student is an active learner who assumes responsibility for learning.

For deaf students also, we need to know more about the underlying factors that connect to the success of students – those characteristics that go beyond such things as scores on placement tests, communication modes, and degrees of hearing level. If such indicators were found, we may be able to improve persistence rates for these students by asking for such information on their college applications and by providing specific guidance for students to acquire these behaviors very early in their college careers.

This study focuses on the study and learning behaviors and habits that characterize active learners. These are factors not directly pertaining to the unique characteristics of deaf and hard-of-hearing students but factors that pertain to all learners. The learning behaviors that researchers have found to be important for successful students are the emphasis of this study. Longitudinal studies have delineated these factors among hearing students (Fike & Fike 2008; Horn & Kojaku, 2001; Higbee & Dwinell, 1998). In this study, an effort was made to replicate these studies with deaf and hard-of-hearing students by collecting data on study and learning behaviors of deaf students in their first terms of their college careers and tracking these students' persistence in college for three to five years.

## 2. METHOD

### 2.1 *Participants*

This study included 134 students, 42 women and 92 men, who were in their first year at the National Technical Institute for the Deaf (NTID) at the Rochester Institute of Technology during the fall terms of 1999, 2000, 2001, and 2002 and who were enrolled in English language classes in their first term. The students were registered for 13 to 18 credits of which 4 to 5 credits were English language courses. The students were in courses at basic reading and writing levels for entering NTID students and represented the lower fifteen percent of NTID entering students in English reading and writing skills. Long-term college persistence for these same 134 students was reviewed at the end of 2005. At that time, these students had graduated, had withdrawn from college, or were still enrolled.

Students who begin their college careers with weak reading and writing skills are frequently labeled as academically underprepared or at risk. Gebelt et al. (1996), Saxon et al. (2005), and Nora et al. (2005) report that academically underprepared hearing students have limited success in higher education but are a very diverse population. There appears to be no such thing as the typical underprepared student (Oudenhoven, 2002). These students may be highly motivated for college work but often lack the ability to use self-regulating learning behaviors and tend to be uncertain about their goals; nonetheless, these students can benefit from course work that addresses learning behaviors and goals (Kolajo, 2004; Higbee, Aerendale, & Lundell, 2005).

### 2.2 *Learning Behaviors*

#### 2.2.1 *In-class behaviors*

From the fall of 1999 through the fall of 2002, data on six learning and study behaviors were collected from the participants in this study during their first fall term when they were in basic level English reading and writing courses. These six behaviors were divided into two groups: (1) behaviors that students demonstrated in class, and 2) behaviors that students exhibited out of class. The in-class behaviors included attendance, attentiveness, and participation. The out-of-class behaviors included completing assignments, using tutorial support outside of class, and doing optional (or bonus) work.

*Attendance.* The first in-class learning behavior was student attendance. The instructor noted class absences and late arrivals every day. At the end of a 10-week course of 40 to 50 class meetings, each student's attendance was ranked on a 5-point scale as follows:

- 1) Greater than 15 absences or late arrivals
- 2) 9 to 15 absences or late arrivals
- 3) 5 to 8 absences or late arrivals
- 4) 2 to 4 absences or late arrivals

- 5) 0 to 1 absences or late arrivals.

*Attentiveness.* The second in-class behavior in this study was student attentiveness. Whether or not a student is paying attention to class activities cannot be assessed as objectively as can presence or absence from class. The course instructor observed attentiveness, and each student received a score that indicated the consistency of the student's overall attentiveness in the course. A high attentiveness score indicated the student was looking at persons presenting or discussing, was attending to materials that were displayed in the classroom, and was able to attend to individual and group in-class work. Students who were not paying attention were involved in activities other than those being addressed at the time; for example, a student was not paying attention when trying to complete homework assignments in class.

Patterns of attentiveness of students in the same 10-week courses of 40 to 50 class meetings were rated on a 5-point scale as follows:

- 1) Never pays attention in class
- 1) Seldom pays attention
- 2) Sometimes – student is paying attention about half the time
- 3) Usually pays attention
- 4) Almost always pays attention

*Participation.* The third in-class learning behavior was a rating of a student's active involvement in class activities. The first year English courses in this study incorporated some student participation at every class meeting. In the courses, students were expected to participate in a variety of activities, such as responding to questions posed by the teacher or other students, working in small groups to solve problems or collect information, working with a partner to do prewriting activities or to evaluate their completed written work. Student participation patterns were rated on a 5-point scale. Students who were not doing their assignments were usually unable to participate meaningfully in class. Such students, therefore, tended to receive lower ratings on participation. The below categories indicate the frequency with which students participated meaningfully in class.

- 1) Never participates in class activities
- 5) Seldom participates
- 6) Sometimes – student participates in class activities about half the time
- 7) Usually participates
- 8) Almost always participates

### 2.2.2 *Out-of-class behaviors*

Teachers provide class assignments to reinforce and supplement the content and skills that students first learn in class. As education proceeds, students are also expected to utilize class assignments for learning information and skills that may not have been explicitly covered during class time. This progression requires that students have some degree of self-motivation and have developed self-learning skills.

Students who are motivated, but do not have well-developed self-learning skills, often seek tutorial support. Motivated students also take advantage of optional work to increase their learning. In this study, three out-of-class learning behaviors or study patterns, were observed and rated: completing assignments, using tutorial support, and doing optional work. The students whose in-class behaviors were studied were the same students whose out-of-class behaviors were studied.

*Completing assignments.* In the first year English reading and writing courses in which the students were enrolled, they had two to three out-of-class assignments every week. Students' patterns for completing assignments in their first term 10-week course of 40 to 50 class meetings were rated on a 5-point scale as follows:

- 1) Less than half of the course assignments were completed
- 2) 55% to 69% completed
- 3) 70% to 84% completed
- 4) 85% to 99% completed
- 5) 100% completed.

*Using tutorial support.* Students have a variety of tutorial services available at NTID. We offer tutoring for English courses in the NTID Learning Center by faculty members and by peer tutors. At the beginning of each course, students were informed about the NTID tutoring services, met various tutors, and obtained the tutoring schedule. The faculty members, both permanent and adjunct, are familiar with the course goals and requirements of our reading and writing courses. The peer tutors are deaf students who have received excellent grades in their courses and who are advanced undergraduate students or graduate students. Course instructors indicate to the students what kind of tutorial support students may need in their courses. Students can utilize the faculty and peer tutoring service on a walk-in basis. Additionally, students can request appointments with the same peer tutor on a regular basis. Some students prefer working with the same tutor week after week rather than with a variety of tutors. Regular tutoring hours were also available to students by the instructor of their course. Thus, students had several ways to obtain tutorial support – from faculty tutors or peer tutors in the learning center, from peer tutors on a regular appointment basis, and from their instructor. When students receive tutoring, the tutor completes a tutoring form or sends email to the course instructor. These records are not perfect, but they do reflect the general frequency and length of a student's use of tutorial support. In this study, students' use of tutorial support was rated as follows:

- 1) Does not use tutoring services
- 2) Seldom meets with tutors, has met with tutors at least once
- 3) Sometimes, met with tutors once in about half the weeks of the course
- 4) Often uses tutoring, but not on a weekly basis
- 5) Uses tutoring on a weekly basis



*Doing optional work.* The last out-of-class behavior assessed in this study was the degree to which students completed the optional work in their first term English reading and writing courses. In these courses, there were optional assignments every two weeks for which the students could collect bonus points toward their course grades. Students' completion of optional work was rated according to the number of bonus points they obtained as follows:

- 1) Earned 20% or fewer of the bonus points offered
- 2) 21% to 40%
- 3) 41% to 60%
- 4) 61% to 80%
- 5) Earned over 80% of the bonus points offered.

There was a maximum limit on the number of bonus points students could collect. However, some students continued to do optional assignments even after they had earned the maximum points allowable. Some students took advantage of this optional work to compensate for a poor grade on regular assignments or tests. Other students did the optional work regularly even though they had completed regular assignments and done well on tests. Still other students did not do any optional work.

### 3. RESULTS

In this section, the overall success (rate of persistence in college after three to five years) for the 134 students who were new college students in the fall of 1999, 2000, 2001, and 2002 when they took basic level English language courses will be presented. Next, the success of these students will be presented as it relates to the three in-class learning behaviors (attendance, attentiveness, participation) and to the three out-of-class learning behaviors (completing assignments, using tutorial support, doing optional work).

#### 3.1 Overall Success

Figure 1 shows the rate of persistence in college of the deaf and hard-of-hearing students (N 134) in the present study. Students were separated into three categories: successful students, partially successful students, and unsuccessful students. Successful students (n 54, 40%) were those who had graduated or were registered students with third-year or higher status. Partially successful students (n 6, 4%) were those who indicated they had transferred to another university or had begun a full-time job. This information is not available unless students provide it. Therefore, some students who might have been in this category were most likely shown as not successful. Unsuccessful students (n 74, 56%) were those who had left without graduating, transferring, or having a full-time job. Figures 2 and 3 indicate a similar distribution across these three categories for women and men.

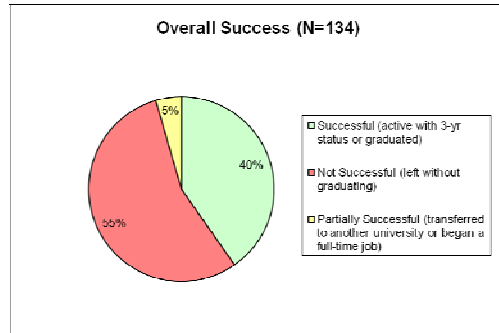


Figure 1. Overall college persistence success for deaf students with basic level English skills.

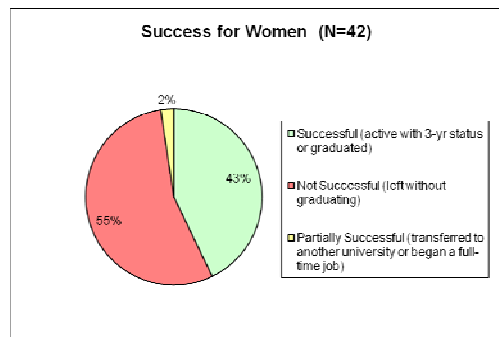


Figure 2. College persistence success for women.

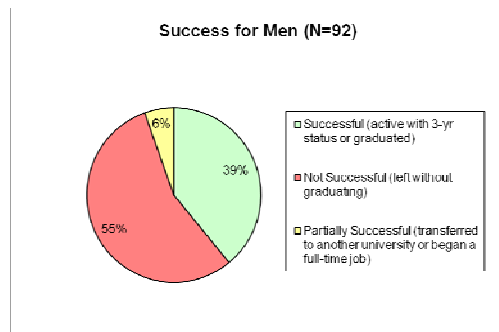


Figure 3. College persistence success for men.

Forty-five percent of the women students were successful or partially successful, whereas 44% of the men were. Analysis of variance indicated the differences be-

tween men and women students for college persistence were not significant ( $p > 0.10$ ). Too few students were in the partially successful groups to hypothesize any reasons why men tended to transfer to another college or leave for full-time jobs somewhat more often than women did.

### 3.2 In-class Learning Behaviors

*Attendance.* Successful students received an average attendance rating on this scale of 4.33, ( $n = 74$ ,  $SD = 0.77$ ); the rating of students who were not successful was 3.39, ( $n = 54$ ,  $SD = 1.21$ ). Thus, the successful students were already demonstrating excellent attendance patterns in their first term at college. Figure 4 shows success in college that students had achieved by the end of 2005 for each of the five attendance ranks. Sixty percent of the students who demonstrated perfect or near perfect attendance were successful in college. As attendance deteriorated so did the students' success rate. None of the students who had the poorest attendance had graduated or were still active students at NTID. As students indicated in their journals (Eilers-crandall, 2008), they are correct in their understanding that attendance is important for success.

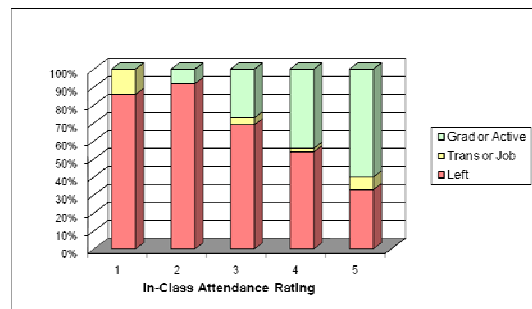


Figure 4. Percent success in college by in-class attendance rating

*Attentiveness.* Successful students received an average attentiveness rating of 4.46 ( $n = 74$ ,  $SD = 0.72$ ); the rating of students who were not successful was 3.41 ( $n = 54$ ,  $SD = 0.96$ ). There were no students who were never attentive in class. The students who already in their first term at college usually and almost always paid attention in class were more likely to be successful. Figure 5 shows the success in college that students had achieved by the end of 2005 for each of the five attentiveness ranks.



Figure 5. Percent success in college by in-class attentiveness rating

Seventy percent of the students who demonstrated consistently good attentiveness were successful in college, but only 19% of those who were attentive about half the time in class were successful, and none of the students who were seldom attentive had graduated or were still active students at NTID. As with attendance, the students who became successful college students already demonstrated the positive learning behavior of paying attention in class during the first term of their first year.

*Participation.* Successful students received an average participation rating of 4.35 ( $n = 74$ ,  $SD = 0.83$ ); the rating of students who were not successful was 3.34 ( $n = 54$ ,  $SD = 1.01$ ). Figure 6 shows the success in college that students had achieved by the end of 2005 for each of the five participation rankings.

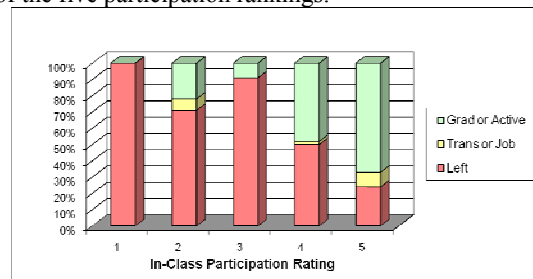


Figure 6. Percent success in college by in-class participation rating.

When students did not participate all or most of the time in class activities, their success in college was greatly reduced. Sixty-one percent of the students who almost always participated meaningfully in class and 48% of those who usually participated were successful. However, students who never participated were unsuccessful in college. As with the two other in-class behaviors rated in this study, the students who in their first term at college already demonstrated a positive learning behavior for participation were more successful in college.

### 3.3 Out-of-class Learning Behaviors

*Completion of assignments.* Successful students, those students who had graduated or were active students with at least third-year status, received an average completion rating of 4.19 ( $n = 74$ ,  $SD = 1.13$ ), which indicates they were completing the vast majority of their course assignments; the rating of students who were not successful was 2.81 ( $n = 54$ ,  $SD = 1.38$ ). Figure 7 shows the success in college that students had achieved by the end of 2005 for each of the five participation rankings.



Figure 7. Percent success in college by out-of-class work completion rating.

Sixty-six percent of the students who completed all of the assignments in their English courses of their first term at college were successful; 55% of the students who completed from 85 to 99% of their assignments were also successful. However, when students completed less than 85% of their assignments, they usually were not successful. The successful students seemed to have a greater level of motivation for completing assignments and to have the self-discipline abilities needed to realize this motivation. The finding that some of the students with low work completion ratings in their first term were successful suggests that motivation and self-discipline can be learned while in college.

*Use of tutorial support.* Successful students received an average tutorial use rating of 3.43 ( $n = 74$ ,  $SD = 1.04$ ), which indicates they were making fairly consistent use of the available tutoring services. The rating of students who were not successful was 2.55 ( $n = 54$ ,  $SD = 1.07$ ) and shows that these students did not seek tutorial support as often as did the successful students. Figure 8 shows the success in college that students had achieved by the end of 2005 for each of the five tutorial support rankings. There is a relationship between regular use of tutorial services and success in college. Seventy-five percent of the students who used tutors weekly were successful in college while only 8% of those who did not use tutoring services were successful. The use of tutoring was apparently something successful students had become familiar with and had realized was beneficial to their learning before arriving at college.

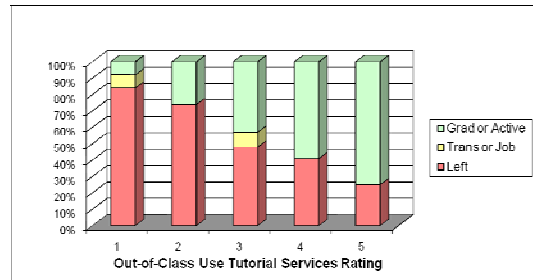


Figure 8. Percent success in college by out-of-class use of tutorial services.

*Doing optional work.* Successful college students obtained an average rating of 3.13 ( $n = 74$ ,  $SD = 1.40$ ) and unsuccessful students an average rating of 2.22 ( $n = 54$ ,  $SD = 1.00$ ). Many students were motivated to do the optional work and many earned more than 40% of the possible bonus points. The rating system should have included a rating to distinguish those who continued to do optional work after collecting the maximum bonus points. Figure 8 depicts the distribution of success by bonus work rating. It is obvious that optional work pays off.



Figure 9. Percent success in college by out-of-class completion of optional work.

#### 4. DISCUSSION

With respect to college success as indicated by persistence to graduation, the deaf college students in this study with approximately forty percent having graduated or attained third year status fare considerably better than typical students at community colleges in the United States. Bailey, Crosta, & Jenkins (2006) report the rate of attaining a degree or a certificate from community colleges is approximately twenty-five percent. Since all of the deaf students in this study were enrolled in programs leading to associate degrees when their learning behaviors were assessed in their first year English courses, it is reasonable to compare them with this community college persistence rate.

The learning behaviors demonstrated in the students' first term of study were related to the students' success in college. All three in-class learning behaviors – attendance, attentiveness, participation – were positive factors for success in college. That these behaviors as measured in the students' first term of college are related to success or lack of success indicates these behaviors are already well established for students by the time they enter college.

The finding that a few students who did not demonstrate positive learning behaviors did end up being successful in college as demonstrated by having graduated or still being actively enrolled in studies at the third-year level or higher warrants further attention. This finding indicates that something occurred after their first term in college that caused them to change their learning behaviors. It also suggests that learning behavior intervention is possible at the college level and would yield favorable results. It would be helpful to know what caused the changes in these students' learning behaviors so that interventions incorporating these factors could result in college persistence for a larger number of students who do not exhibit positive behaviors when they enter college.

The three out-of-class learning behaviors – completion of assignments, use of tutoring services, doing optional work – included in this study also were positive factors for success in college. Again, a large number of students who were successful in college apparently had already acquired these habits and attitudes before embarking on their college careers.

The findings in this study are not surprising. The characteristics of successful hearing college students are the factors investigated here, and they are shown to be characteristics of deaf college students, too. We might ask how we can best utilize the information in this study and if we should accept a success rate of forty percent for under-prepared students. When students are unsuccessful in college, disappointment results for students and their parents as well as for their college faculty and administrators. If we continue to accept students into college without the skills, behaviors, and attitudes needed for success, we are obligated to work toward the goal of increasing the success of these students. We need to develop strategies and techniques for fostering the learning and study behaviors included in this study. Then, we will need to make services available to these students to assist them in developing and implementing positive learning behaviors and study habits. We should also determine which students can develop and implement positive learning and study characteristics at the college level if they have not done so in their educational experiences prior to their college career. Finally, we would want to investigate whether or not students using these newly acquired behaviors will demonstrate higher rates of persistence in college.

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#### BIOGRAPHICAL NOTE

Kathleen Eilers-crandall is a faculty member of the National Technical Institute of the Deaf at the Rochester Institute of Technology. She earned her PhD in communication sciences and disorders at Northwestern University. She has worked with Deaf people in a variety of educational settings and has authored many publications and presentations related to her work in English language learning.