

# Persévérance: an Online Support Tool for Post-Secondary Perseverance

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Abstract: Who are the students abandoning post-secondary studies? What variables predict their dropping out? What measures should be put into place to help prevent students from dropping out? What online perseverance support tools are used by undergraduate students experiencing their first session of university studies? Our research team tried to answer all these questions by putting in place what is called SAMI-Persévérance (Système d'Aide Multimédia Interactif à la PERSÉVÉRANCE aux études postsecondaires). This paper aims to briefly introduce you to our Web environment for enhancing student perseverance. We will also present some results of the research that took place during the 2006 fall semester at three Québec universities.

Perseverance in post-secondary studies has been the subject of considerable research for nearly forty years. Interest in this area of research coincides with the growth of higher education itself and the arrival of the knowledge society, as founded on information and communication technologies. Since the work force requires qualified and highly-educated workers, post-secondary institutions have seen their enrolments soar. However, the drop-out rate in North American colleges and universities remains high: it varies from 20% to 25% in first year, and 20% to 30% in subsequent years of study. (Grayson, 2003) In Canada, 24% of the young people between the ages of 18 and 24 who began post-secondary studies dropped out within 18 months of their first registration (Barr-Telford et al, 2003). In the province of Quebec, 20.2 % of students abandon their university studies (Ministere de l'Education, des Loisirs et du Sport-MELS, 2005).

The large number of drop-outs has grave consequences for society as well as for universities and students. It means fewer students enrolled in universities, lost opportunities for the students themselves, and loss of revenue and productivity for society (Grayson, 2003). The universities play a crucial role in this matter, because professional preparation is a fundamental role for them. The challenge for universities is to go beyond providing access to studies by putting mechanisms into place to ensure that students persevere beyond first year. It is in response to this challenge that our team has established the experimental Web environment known as S@MI-Perseverance (Système d'Aide Multimédia Interactif à la Persévérance aux études postsecondaires en ligne). Our approach uses technology to help students to persevere and to consequently reduce the drop-out rate. This research is supported by the FQRSC (2005-2006) and the Inukshuk fund (2006-2007).

In the following text we briefly present the context and the main research question. We describe the S@MI-Perseverance Web environment, its components and its structure. Finally, we describe the research methodology and our early results.

## Context and Research Question

For several decades research studies have explored factors leading students to abandon their studies or to persevere until they obtain university degrees. Like Barr-Telford et al (2003) and Chenard (2005) we hypothesized that the decision to interrupt studies cannot be attributed to a single factor but rather to multiple factors at work at various moments in the life of the student.

What factors influence the student's decision? They are multiple, according to Tinto (2005) and differ (according to the moment). (Arulampalum et al, 2005) A review of the research literature (Sauvé et al, 2006a), lead to the creation of five categories: (1) personal: sex, age, psychological state of mind (distress and suicidal tendencies), motivation towards studies; (2) learning: motivation in a learning context, learning style, approaches to learning, self-regulation and learning difficulties; (3) interpersonal and institutional: rapport with other students and with staff and faculty, sexual orientation, difficulty in adapting to the institutional context, and degree of academic and social integration; (4) family: parental responsibilities, support from family and friends, demands of work and studies and (5) environmental: minority group membership, socio-economic status, financial resources, the competing demands of work and study.

How can we reduce the drop-out rate in post-secondary studies? Several studies show that, in order to stimulate perseverance in studies, it is important to develop support systems which take into account the characteristics and difficulties of students (Chenard, 2005; Sauvé et al, 2006a; Roy, 2006). Yorke and Longden propose the following avenues to increase levels of perseverance: (1) improve the student decision-making process with regard to his or her program of studies; (2) improve the student experience in the college or university; (3) improve the academic performance of the student and his or her fundamental response to the demands of study in higher education; (4) understand the events that impinge on the lives of students and account for them in students' academic pathways.

Universities have developed varied structures and frameworks to support students in post-secondary settings (Cartier and Langevin, 2001): welcoming activities, workshops on strategies for success, seminars, twinning of students at various levels, mentoring, support networks, help centres, individual consultations, make-up courses, telephone help lines, approaches to teaching, and indirect approaches by professors and support personnel. What do we know about the impact of these structures?

Begin and Ringette (2005) note that approaches to lowering drop-out rates and failure in higher education tend to operate within certain limits: "The actions are numerous and varied, but there is little coordination among them" (p.231). Too many different people are involved. Actions are undertaken disjointedly and there is little to encourage an integrated and coordinated approach. What is more, according to the authors, those who intervene do not have an overview of the student's situation and cannot possibly be working from a comprehensive picture of his or her needs. Support measures are often developed in an isolated manner in a given faculty and the experiences of the faculties are not woven into subsequent comprehensive plans of action. There are often no structures to facilitate the exchange of this information. University structures attempt to integrate students into the institution but do not concentrate on the needs of the students. As far as structures to support students online are concerned, an analysis of these structures by Sauvé et al (2006a) concurs with Tremblay's findings (2005): the content offered online is often static, text-based, and non-interactive. Very few of the online environments allow students to diagnose their needs in the areas of personal, learning, interpersonal and institutional, family, and environmental problems. Very few of these environments use real time communications such as audio and videoconferencing to support exchange among students, teachers and resource personnel: in general, they are limited to e-mail and discussion forums.

Taking into account the magnitude and complexity of the drop-out problem, we focused on the questions of what actions to put into place to diminish the drop-out rate and to stimulate perseverance during the first session of university studies. This study attempts to address this main research question: "What are the support tools and how do they take into account specific characteristics having an effect on withdrawing or abandoning studies during a student's first session of university studies?" To read more on objectives and specific research questions, we invite you to consult: <http://recherche-perseverance.savie.ca>.

## Sami-Persévérance

To respond to the specific research questions, we have developed and put online a multimedia interactive help

environment (SAMI-Perseverance) intended to help students in difficulty during their first semester of university study. At the same time, this system helped us to gather the information necessary to answer our research questions.

The three interfaces of the SAMI-Perseverance online system are the conception interface, the intervention interface, and the perseverance support interface. While the first two interfaces are for use by professors and support personnel, the third is for student use. At the heart of the SAMI-Perseverance system, this Web interface offers an independent learning environment and a place for reflection and self-evaluation for beginning post-secondary students. The system respects the principles of *personalization* of learning (Sauve, 2006) as it depends on an analysis of the needs of the student as well as his or her learning profile to offer support tools adapted to the student's needs.

The perseverance support interface mediates students interaction and response to the university experience at three distinct stages. The first stage is before the student's admission: he or she is invited to write his or her CV and to select a program of study. The second stage is after the student is accepted and registered but before the semester starts. The student completes questionnaires to generate his or her learning profile and undertakes activities to help prepare for the first semester of university study. The third stage is during the first semester of studies. It is designed to help the student meeting with difficulties during that time.

The statements in the interface were developed on the basis of an analysis of the factors leading withdrawal from university studies and after a survey of the university environment. During the first semester of studies, the student is invited to analyze his or her needs in terms of perseverance factors according to a list of statements supplied in the interface. Once the analysis is complete, the system proposes support tools according to the student's learning profile. These tools are offered in the form of a personalized record to follow throughout the first semester of studies. Difficulties are presented in the interface in such a way as to "speak the language" of the student.

## Methodology

The research study involving S@MI\_Perseverance took place in the fall of 2006 with students on campus at two universities (Universite de Sherbrooke and UQAR: Levis Campus) and distance education students (TELUQ: l'universite à distance de l'UQAM). The choice of research subjects, about 200, took into account the research budgets available, **the type of clientele studied**, and the number of variables studied. Several variables were analyzed in order to reach the objectives of our study. The construct of "learning characteristics" involves variables linked to motivation and its determinants, learning styles, approaches to learning and self-regulatory strategies. The construct "socio-demographic data" examines age, sex, part-time/ full-time, program of study, most recent diploma, work commitments and financial situation. The construct "difficulties" brings together five kinds of difficulties (Table 1) presented to the students as a list referring to five kinds of help established in our study. The "support" construct involves the support tools offered to the students during their first semester of studies as well as the involvement of the staff during the semester.

**Table 1: The Five Areas of Support and Difficulties**

<i>Area of Support</i>	<i>Difficulties considered</i>
<i>Identify my personal difficulty</i>	<i>Orientation, stress in studies, financial Situation, social support network, time management, personal situation overview</i>
<i>Get my prior experiences up to date</i>	<i>Competencies and prior knowledge, knowledge of information technology tools, knowledge of study strategies and techniques (university level)</i>
<i>Integration into my studies</i>	<i>Knowledge of the university (institutional aid, language of the academy, knowledge of my program), social and academic integration</i>
<i>Improve oral and written communications</i>	<i>Language mastery (French reading and writing, English reading and writing, and competencies in communications)</i>
<i>Develop study strategies</i>	<i>Self-regulatory strategies, learning strategies, difficulties</i>

This descriptive study is based on a data-gathering and analysis process. Various instruments were administered to the test group of students. Before the experimental phase, we gathered demographic data (personal information, information associated with the family situation and the financial situation) and five questionnaires linked to: the learning styles of Kolb; to the modes and conditions of learning of Canfield; to the learning strategies of Viau, Cartier and Debreume; to the management strategies of Viau et al; and to the motivation in the context of learning by Viau et al.. During the experimental phase and throughout the semester, a tracking system integrated into the data-collection mechanism monitored difficulties encountered, tools used, types of exchanges among students and professors, etc.

At the end of the experimental stage, a questionnaire and a semi-structured interview on perseverance and drop-out factors were administered to all students (those who persevered and those who dropped out) as well as a questionnaire designed for the universities involved (to determine if the students voluntarily left the university and whether they registered to come back to study).

## **Early results**

Three hundred eighty-nine students volunteered to get involved in the study. Of this group, 221 were attending university for the first time. Our sample was made up of 100 students at UQAR, Levis Campus, 78 at TELUQ, and 43 at the Université de Sherbrooke.

### ***Socio-demographic data***

The study sample was made up largely of women (88.5%) with an average age of 20 to 24 whereas the men were aged on average 35-39. The majority of the students (69.66%) were full-time, while 25.34% were part-time and 4.90% were undeclared. At UQAR 97% of the students were full-time, while 93.1% of the Sherbrooke students were full-time and 21.8% of the TELUQ students were full-time. Almost one quarter (23.5%) were employed more than 30 hours per week (60.2% of them at TELUQ, the distance university) 8% from 20 to 30 hours per week, 16% between 16 and 20 hours per week, 20% from 10 to 15 hours per week, and 21% were not employed during the semester. About 17% of the students who worked more than 30 hours a week were studying on a full-time basis. The financial situation of the respondents was 87.8% good, 3.6% excellent and 8.6% unacceptable. At the TELUQ 28.2% of the students surveyed live with a spouse and children compared to 23.26% at Sherbrooke and only 10% at UQAR-Levis. These early results indicate that those who study through distance are different from their on-campus counterparts insofar as the rhythm of their studies and their working lives are concerned.

### ***Learning characteristics***

The majority of the respondents were **divergers** (67.7%). These students are, in general, people-oriented. They are sociable and prefer interpersonal relations in pairs or small groups rather than large social groups. They accord little importance to theory. Their main resource, their imaginations, allows them to analyze facts from different perspectives. As they are very creative, they easily generate original ideas, particularly in brainstorming sessions.

Their vast cultural interests lead them to pursue arts and social sciences. Professions appropriate to people with this profile include advising, primary or secondary teaching, development officer, and helping professions. The other respondents were **assimilators** (11.2%), **accommodators** (7.2%) and **convergers** (3.2%). Note that both the distance and on-campus students were mostly diverters: 69.14% at UQAR, 68% at TELUQ, and 61.11% at Sherbrooke. Students value learning conditions as follows: independence<sup>1</sup> (80.3 %), structure<sup>2</sup> (61.6 %), social<sup>3</sup>

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<sup>1</sup> Independence : Prefers an autonomous learning situation, the pursuit of own objectives and interests, taking decisions in terms of determining work objectives, respecting own pace, study as a function of own plan and alone.

<sup>2</sup> Structure: Wants courses planned and presented in a logical fashion, a definition of the objectives of the course, an explanation of the assignments, and the rules to follow.

<sup>3</sup> Social: Prefers to work in groups, warm and close supportive relations with other students, development of friendships, good rapport between students and teachers.

(59.8 %), and little importance to authority<sup>4</sup> (72 %).

The learning modes of the students were as follows: 32.14% preferred reading, 35.7% preferred experimentation (hands-on practice), 16% preferred guided experience, 10.7% preferred self-instruction, and 5.3% preferred listening. There is no significant difference between distance learning versus on-campus respondents, with regard to learning conditions and learning modes.

### ***Difficulties encountered during the first semester of study***

Our subjects also identified the five most important difficulties they encountered during their first semester of university studies: (1) I would like to know strategies to remember more easily the information I read (49%); (2) I would like to know my strengths and my prior learning to better know myself (48%); (3) I do not know the rules of presentation for university assignments (48%); (4) I would like to be more familiar with the tenses of verbs in English (44%); and (5) I would like to be better equipped to meet the challenge of the workload facing me in my university studies (note-taking, study methods, time management, etc.) (38%).

These initial analyses indicate that the fact that the difficulties most often encountered by the students in our sample refer more to knowledge and competencies already acquired (or the lack thereof), such as study methods and the use of computer applications, as well as first and second language mastery. On the other hand, our subjects did not express many difficulties relating to academic and social integration into their studies. We intend to undertake a finer analysis to learn, for instance, if our distance students and our campus students encountered different problems.

## **Conclusion**

As we indicated above, dropping out and persevering in university studies are complex phenomena and explaining them requires a close study of a number of interacting factors. In our study we analyze the principle factors, with an application in three Quebec universities and including on-campus and distance learners in their first semester of studies. We are supported in our study by the multi-media interactive online environment designed with perseverance in mind: SAMI-Perseverance. Our early results are presented in this account, and we will pursue our work in comparing the students who dropped out with those who persevered. To make our sample clear, we will turn to a definition of dropping out and persevering in university studies. Abandoning studies, or dropping out, occurs when a student leaves an establishment in which he or she is registered without obtaining a diploma. Two kinds of abandoning are identified: (Grayson, 2003; King, 2005; Powell, 2006): (1) voluntary drop-outs and (2) involuntary withdrawal (i.e. the student leaves because of an institutional decision). When students leave the university on their own accord three kinds of decisions are also identified: the student decides to temporarily interrupt his or her studies, the student decides to move to another institution or the student decides to stop university studies altogether. In our study, the student considered to have abandoned voluntarily decides not register for the second session (whether or not he or she puts it in writing) or involuntarily (had to leave by order of the authorities of the university). Perseverance in university studies is in general defined as a constant pursuit of a program of studies right through to obtaining the degree. In this study, students who persevere are those who take up the second semester in the same institution. At the end of our study we should be able to provide a table showing the precise factors which lead students to discontinue or to pursue their studies after the first semester at university, and provide new insights into the reasons for dropping out. The findings will apply to both distance and on-campus students in Quebec and the findings will shed further light on learning characteristics as well as personal and family difficulties. This is of particular interest because the research regarding these factors has not yet uncovered robust findings.

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<sup>4</sup> Authority : Pays little attention to competition, to comparison with others in order to be recognized, and to the presence of a directive and authoritarian professor.

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