

School Name **Broward College**
Course Name **Multiple**
Course Format **On-ground, Hybrid, Online**

Key Results Broward's analysis of spring 2015 results showed an average 84.3 percent success rate among students who used Smarthinking, across all campuses and all courses, compared to an average 66.1 percent success rate for non-users. Withdrawals among Smarthinking users were just 3.7 percent compared with 12.5 percent among non-users.

Administrators

Noel Betts, Senior Research Associate, Institutional Research, Planning, and Effectiveness

Eileen Garcia, Dean, Academic Affairs

Nicholas Ritchie, Senior Analyst, Student Achievement Initiatives, Developmental Education

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David Shulman, Campus President, Broward College Online

Setting

The first and largest higher education institution in Broward County, Florida, Broward College offers a high-quality yet affordable education to a diverse student population hailing from more than 175 countries and ranging in age from teens to 60+. Broward serves 68,000 students annually, offering Baccalaureate and Associate's degrees, technical certificates, competency-based learning, and industry credentials to students on three physical campuses and a growing virtual campus.

Challenges and goals

Longstanding users of Smarthinking, Broward periodically evaluates the connection between student performance and students' engagement with Smarthinking tutors. A 2005 Broward research study into the effectiveness of Smarthinking concluded, "The results indicate greater success for students who received tutoring through the Smarthinking service. In an examination of the top ten courses, the Smarthinking students attained passing grades at higher rates than their college-wide counterparts, in all instances."

As its online student population expands and its student body diversifies, Broward is taking steps to promote Smarthinking and to make access to Smarthinking seamless and direct for

students within Broward's LMS. In spring 2015, Broward partnered with Pearson on an efficacy study to again evaluate the impact of Smarthinking on student performance.

Implementation

The Broward leadership team wants to ensure that all students, whether on campus or online, have access to the full range of student support services, including Smarthinking academic tutoring. Students may access Smarthinking tutor services anytime, by clicking the link within Broward's LMS. The team also promotes Smarthinking with periodic announcements in the LMS, through posters on campus, and through faculty recommendations. A recent promotional announcement in the Broward LMS advised students that "Students who use Smarthinking are 18% more likely to be successful." This statistic derives from Broward's own ongoing efficacy research tracking the relationship between Smarthinking usage and student performance.

Dean of Academic Affairs Eileen Garcia notes, "My research in supplemental instruction informs my thinking that double exposure to concepts propels learning. Smarthinking is one of the resources we provide to give students multiple opportunities to engage with essential course content—within guided, instruction-rich environments. An added advantage of Smarthinking is that, unlike our campus tutoring centers or instructors' office hours, Smarthinking tutors are available around the clock. When students need assistance with a draft of an essay or a physics homework problem, a Smarthinking tutor is available to provide that instructional guidance."

Faculty in all disciplines are encouraged to recommend or require Smarthinking usage. Some courses have been deliberately designed to incorporate Smarthinking. For instance, all sections of Introduction to Composition (ENC 1101), a required course for freshmen, mandate that students submit drafts of three papers to Smarthinking writing tutors for review.

“This was my first experience with Smarthinking. The paper was returned less than 5 hours after I sent it (amazing!) with a super detailed and helpful review. Thank you so much!”

—Student

Dean Garcia states, “Targeting freshman writing courses is a deliberate strategy to provide supplemental instruction for this essential academic skill early in students’ academic programs. The Smarthinking writing tutors give students valuable feedback and guidance as they are working through first drafts. Students may find it easier to seek feedback on their early, rough drafts from a Smarthinking tutor who, while expertly trained, is distant and not responsible for assigning grades. Our composition faculty, in turn, find their grading time reduced since they receive essays that have been reviewed by Smarthinking tutors and revised by students before being submitted for grading.”

Results and data

In collaboration with Pearson, Broward analyzed students’ spring 2015 performance, comparing results of students who used Smarthinking tutoring to results of students who did not use Smarthinking tutoring:

Course Success Rates Spring 2015: All courses (developmental and college-level), All campuses

	Percent Success	Percent Non-Success	Percent Withdrawals
Smarthinking	84.3	12.0	3.7
Non-Smarthinking	66.1	21.4	12.5

Table 1. Course success rates (both developmental and college-level) spring 2015 among students who used Smarthinking ($n=2,080$) and students who did not use Smarthinking ($n=17,260$)

- Success-Students who received a grade of A, B, C, or S
- Non-Success-Students who received a grade of D, F, or U
- Withdrawals-Students who received a grade of W

College-level Course Success Rates Spring 2015: All campuses, all Smarthinking courses

	Percent Success	Percent Non-Success	Percent Withdrawals
Smarthinking	84.5	11.7	3.8
Non-Smarthinking	66.0	21.3	12.8

Table 2. Course success rates spring 2015 among students who used Smarthinking ($n=1,965$) and students who did not use Smarthinking ($n=16,527$)

Developmental Course Success Rates Spring 2015: All campuses, all Smarthinking courses

	Percent Success	Percent Non-Success	Percent Withdrawals
Smarthinking	81.7	16.5	1.7
Non-Smarthinking	67.9	24.4	7.6

Table 3. Course success rates spring 2015 among students who used Smarthinking ($n=115$) and students who did not use Smarthinking ($n=733$)

Course Success Rates Spring 2015: All campuses, Top 12 courses

	Percent Success	Percent Non-Success	Percent Withdrawals
Smarthinking	75.2	18.7	6.1
Non-Smarthinking	56.1	28.1	15.7

Table 4. Course success rates spring 2015 among students who used Smarthinking ($n=625$) and students who did not use Smarthinking ($n=6,484$)

Course Success Rates spring 2015: All campuses, All courses, by number of Smarthinking visits

Percent success 1 visit	45.7
Percent success 2-5 visits	44.3
Percent success 6-10 visits	5.7
Percent success 11+ visits	4.3

Table 5. Percentage of successful students spring 2015 who used Smarthinking ($n=1754$) by number of Smarthinking visits

Students’ Average Term GPA spring 2015: All campuses

	All Courses	College Level	Developmental	Top 12 Courses
Smarthinking	2.86	2.88	2.68	2.62
Non-ST	2.43	2.43	2.27	2.20
Difference	0.43	0.45	0.41	0.42

Figure 6. Students’ average term GPA spring 2015 among students who used Smarthinking ($n=2,080$) and students who did not use Smarthinking ($n=17,260$)

*“The tutor did not solve the statistics problem for me but made sure I knew how to solve it myself.
Now I understand exactly where I went wrong.”*

—Student

In a review of the data, Broward’s leadership team noted that:

- Similar to the findings of the 2005 research into Smarthinking’s impact, the spring 2015 results suggest increased success rates among students who used Smarthinking versus non-ST users; these results appeared consistent:
 - across all physical campuses and among online students
 - for both developmental and college-level courses
 - for the Top 12 courses (Principles of Accounting, General Biology, Human Anatomy & Physiology, Computer Internet & Literacy, Chemistry for Health Sciences, General Chemistry A, General Chemistry I, Composition I, College Algebra, Trigonometry, Intermediate Algebra, Statistics)
- Among Smarthinking users who achieved success, 90 percent achieved success with only 1 to 5 Smarthinking engagements. Further research, including an investigation into students’ access of all tutoring resources, both on-campus and Smarthinking, will be needed, but these results suggest that a modest tutoring intervention may impact overall student success.
- Withdrawals among Smarthinking users, across all campuses and all courses, were 3.7 percent compared with 12.5 percent withdrawals among non-users.
- Average term GPA among Smarthinking users, across all courses and all campuses, was 2.86 versus 2.43 among non-ST users, suggesting an average difference of 0.43 or nearly equivalent to half a letter grade.

The student experience

95 percent of Broward Smarthinking survey respondents reported that they would recommend Smarthinking to a friend

Sample Broward student comments:

“I had an awesome experience. Now I understand how to work my algebra problems!”

“My tutor answered all my algebra questions and made learning fun.”

“I hate having to go and speak to someone about how terrible my writing is. But with Smarthinking, I can get the help I need without the shame of feeling like a bad writer.”

“I came in confused and in a matter of minutes my tutor was able to explain what I needed. The best part is that I was encouraged to do it myself. Awesome!”

“My tutor’s advice regarding thesis improvement and sentence structure will really help me with future essays.”

“My tutor pointed out the areas I needed to fix, and I feel more confident as I start writing my final draft.”

“My tutor did a fantastic job reviewing my nursing essay for clinical content. In addition, she provided insightful feedback on how to improve the overall quality of my essay. I truly appreciate her professional assistance and would recommend Smarthinking to other students.”

“I don’t know why I ever hesitated to use Smarthinking. I literally needed one little nudge in the right direction, and the problem was solved.”

“The tutor’s feedback was spot on per my teacher. Great job. Because of my revising, I made my paper stronger and received an A.”

—Student

Conclusion

The Broward leadership team identified questions for possible further research:

- the optimal number of Smarthinking visits to positively impact student success
- the individual topics within courses for which Smarthinking tutoring is most helpful

The Broward leadership team was pleased to note:

- overall higher student success (passing with an A, B, C, or S) rates among students who used Smarthinking tutors versus students who did not use Smarthinking tutors
- significantly lower withdrawal rates among Smarthinking users compared to non-users
- success rate achieved with a relatively modest intervention (1-5 Smarthinking visits)
- evidence that more students are accessing Smarthinking, indicating that efforts to promote Smarthinking through faculty advocacy and direct-to-student marketing are showing success.

This user-report case study documents implementation practices and evaluates possible relationships between program implementation and student performance. These findings are not meant to imply causality or generalizability beyond this specific instance. Rather, findings from this study demonstrate associations potentially useful for further theory testing in future experimental studies. For this case study, a mixed-methods design was applied, and the data collected included qualitative data from interviews, quantitative program usage analytics, and student performance data. An open-ended interview protocol was used to guide data collection.