

Assessing the Effectiveness of Targeted Intrusive Advising and Student Success Using an Early  
Intervention Program

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## ABSTRACT

The institution in this study is a medium size, public liberal arts institution located in a rural setting. At the beginning of Fall 2012 term, 5,366 undergraduate and 922 graduate students were enrolled in the university's ten-week quarter system. In an attempt to increase student success and retention, the institution implemented a student success initiative. This initiative used an early alert and intervention program to prompt targeted intrusive advising appointments with students marked at-risk by faculty or staff. A student success analysis based on student contact was conducted to identify any correlations between the population of students who responded and received an intervention, compared to the population that did not respond. Seven hundred and thirty two requests for intervention were submitted between the Winter of 2013 and the Spring of 2014 (excluding summer session); averaging 146 referrals per term. In total, 672 students were referred using the early alert system. Of the 672, the university intervened with 279 students (42%); 393 did not respond to intervention requests (58%), which is a consistent response rate when compared to other early alert research (Dobele, Gangemi, Kopanidis, & Thomas, 2013; Hudson, 2006). When evaluating the student population that received an intervention, 137 of the 279 were considered successful or 49%. One hundred and thirty one (47%) did not demonstrate positive academic progress and 11 (4%) were considered neutral. The population of students that did not respond showed an increased level of negative academic progression. Of the 672 referred students, 393 did not respond to a request for intervention and 52%, or 204, did not demonstrate positive academic progress. Additionally, only 41%, or 161, were considered successful and 7% (28) were considered neutral. In contrast, the student population that received an intervention had a 49% success rate; a success rate difference of 8%.

## Overview

The university is a medium size, public liberal arts institution that operates on a ten-week quarter system. At the beginning of the Fall 2012 term, 5,366 undergraduate and 922 graduate students were enrolled, totaling 6,188 students. This university primarily serves first-generation college students and individuals coming from a low-income background. Recognizing the need to indentify students at-risk of failing or attrition, the institution decided to adopt an early alert and intervention program. A new student success specialist position, situated in the university's advising office, was created and tasked with the design, development, and implementation of the program. This was done intentionally for one primary reason; effective academic advising is seen as a key element to student success and retention (Drake, 2013; Nutt, 2003; Swanson, 2006; Tinto, 1993) and thus, housing such a position within the university's general advising office was deemed most appropriate.

The ideology of advising has existed in a variety of forms since the outset of higher education in the United States (Gillispie, 2003). As academic advising evolves, professionals are faced with numerous circumstances. These circumstances, once a rather linear process, have transformed into a complex consecution of intercommunication that emulate a multitude of academic, developmental, personal, social, and institutional problems (Drake, 2013). The transformation in the field of advising has led many institutions to shift their approaches with regard to student services.

As the increased complexity of student issues continue to grow (outlined below), research regarding the validity of advising as it relates to student success has increased (Bahr, 2008; Engle, Tinto, & Pell Institute for the Study of Opportunity in Higher E., 2008; Heiss-Arms, Cabrera, & Brower, 2008; Kuh, Kinzie, Schuh, Whitt, & Associates, 2005; Kuh, Kinzie, Schuh,

& Whitt, 2011a; Nutt, 2003; Schwebel, Walburn, Klyce, & Jerrolds, 2012; Swanson, 2006; Young-Jones, Burt, Dixon, & Hawthorne, 2013). The increase of modern research within the field insinuates that institutions have either started to shift towards a more student success oriented approach to advising, rather than simply assisting students with choosing coursework for the subsequent term, or research regarding student success and retention has increased.

Advisors today are addressing issues related to finance, personal relationships, decisions about coursework, choosing a major and minor, and academic progress (Drake, 2013; Miller, & Murray, 2005), in addition to study skills, learning styles, and note taking methods. The role of the student success specialist encompassed all aspects of general advising as well as information related to student success and university processes.

When a faculty or staff member refers a student to the student success specialist using the web-based system, an automated email is sent to the student notifying them that a faculty or staff member is concerned about their academic progress. The email provides information regarding tutoring, withdrawal processes, and important deadlines. The email also recommends that the student schedules an appointment with the student success specialist to discuss the issues further.

### **Early Alert**

Electronic early alert and intervention systems provide institutions with a methodical process used to identify and intervene with students who are exhibiting at-risk behaviors (Tampke, 2013). In the early history of American higher education, student success and retention was not important (Siedman, 2012). Only in the last few decades of the twentieth century did the demand for higher education and aspirations for degree achievement increase and student success and retention became important (Siedman, 2012). Web-based early alert programs can vary in structure and application (Tampke, 2013). For example, Bowen, Price,

Lloyd, and Thomas (2005) assessed the effectiveness of early interventions as it related to attendance tracking, while other research has focused on midterm grade reporting (Cuseo, 2004). Some early alert software goes as far as offering predictive analytics by combining an institution's enrollment information with data gathered from student surveys and subsequently identifies the strengths and weaknesses of each student to further assist the institution in making meaningful decisions related to current and future retention initiatives (Noel-Levitz, n.d.). The early alert system used in this study was targeted at undergraduate students and offered a wide-range of reasons for the referral (See methods section for more details).

Research conducted by Hudson (2006) provides promising results for early alert systems as it relates to excessive absenteeism and the retainment of freshman students. Specifically, 216 students were reported as having excessive absenteeism in the 2<sup>nd</sup>, 4<sup>th</sup>, and 6<sup>th</sup> week of the semester. Of the 216 referred students, 108 (50%) received a contact attempt, however 91 of the 108 responded to the contact attempt. Additionally, Forty-four (48%) of the 91 contacted students remained in the course in which they were referred from and passed, compared to the 33 (36%) who remained in the class and failed. Fourteen of the 91 students dropped the course. In addition to the 48% success rate, students reported being surprised that their attendance was being tracked and shocked that "...someone cared enough to contact them and offer guidance and assistance." (Hudson, 2006, p. 225).

Chappell (2010) also assessed the use of an early alert system to report students who were not attending class. Faculty could electronically record if a student had missed class by using their electronic class roster. Email notifications were sent to students who were reported as absent. Similar to this study, each referral was assigned to an academic advisor. Findings showed an increase in student success outcomes from 52% to 66%.

While it appears that most early alert programs rely on increased levels of student contact as part of their method to foster student success, this study included, other research has indicated that "...simply engaging in the [intervention] process is not enough to ensure improvement." (Dobele et al., 2013, p. 69); however, Dobele and colleagues also noted that students who engage in the at-risk process are less likely to become at risk again, compared to those students who do not engage. Literature regarding student engagement and success is not sparse; however, despite the growing trend of early alert programs, scholarly research regarding the practices is infrequent (Fletcher, 2012).

Despite the present gap in literature, findings from a national survey conducted by Fletcher (2012) targeted at 1,778 four-year institutions across the United States indicated 81.4% of respondents (529) were moderately-to-very satisfied with their early alert program.

### **Implementation**

The university purchased the web-based early alert system in the summer of 2012. Design and development began at the start of the Fall 2012 term with a pilot program scheduled for release in Winter 2013. There were two implementation environments to consider: 1) the web-based early alert system, and 2) the integration of the system into the university environment.

The early alert system component was rather systematic and included time for discovery, during which the company contracting the early alert system and the university's implementation team established a timeline, in addition to identifying the type of student information system (SIS) used by the university. From there, computer programming and scripting was done to automatically select specific information from the SIS system and upload the data into the early intervention program using a Secure Shell File Transfer Protocol method, commonly referred to

as SFTP. Because the university housed its own student Portal, Single sign-on (SSO) protocols had to be created to auto authenticate users into the system. This process made accessing the system for faculty and staff easy by logging in the university Portal page, then simply clicking on the early alert icon. Additionally, administrator training was conducted in a simulated environment during the Fall 2012 term. University-wide training was conducted by the student success specialist both in person and via instructional video.

During the Fall 2012 development of the early alert system, emails were sent to the deans of the College of Education and the College of Liberal Arts and Sciences asking for interested departments to participate in the Winter term pilot program. Ultimately, faculty from Math, Biology, Criminal Justice, and Health/Physical Education volunteered to participate. Student service offices, such as the Student Enrichment Program (TRIO) and the Multicultural Student Services Program also participated. In the Winter of 2013, campus collaboration efforts began in an effort to obtain buy-in from stakeholders (i.e., faculty and staff). Presentations were given at the College of Education and the College of Liberal Arts and Sciences department and division meetings across campus. Question and answer sessions were held and demonstrations were provided to faculty and staff. At the beginning of the Spring 2013 term, the program went live campus-wide.

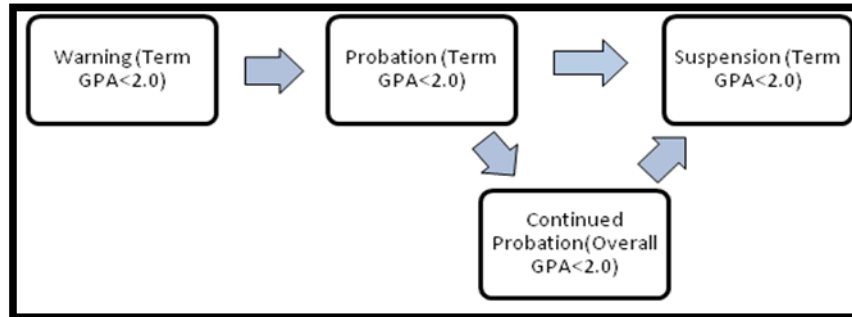
## **Method**

### **Definitions**

The university had a modified three-strike academic standing policy. That is, if a student had three *consecutive* terms with a term GPA less than 2.0 the student would be suspended. It is important to understand how the university standing policy is constructed as academic standing

was used to assess student success in this study. Below is a chart that further exemplifies the process.

Figure 1



For the purpose of this report as it relates to student success, an intervention is considered successful if any of the following conditions are true:

1. A student is referred AND:
  - a. Was contacted by advising staff regarding the RFI and
  - b. The student is in good standing and stayed in good standing at the conclusion of the term.
2. A student is referred AND:
  - a. Was contacted by advising staff regarding the RFI and
  - b. The student was, at the time of the referral, in academic warning status but returned to good standing at the conclusion of the term.
3. A student is referred AND:
  - a. Was contacted by advising staff regarding the RFI and
  - b. The student was, at the time of the referral, in academic probation status but returned to good standing at the conclusion of the term.
4. A student is referred AND:
  - a. Was contacted by advising staff regarding the RFI and
  - b. The student was, at the time of the referral, on academic warning status AND continued on academic warning (continued academic probation) at the conclusion of the term.

Some students in this report are considered neutral. This occurs when:



1. A student was in bad academic standing and maintained that same standing at the conclusion of the term. For example, this may occur if a student was on academic warning and then withdrew from the current term. Thus, the student maintains the last term attended academic standing.
2. A student is a new freshman and did not have academic standing prior to the term. If the student then withdrew from the term, or otherwise received non-punitive grades resulting in no academic standing, the student would be considered neutral.
3. A student had no immediate prior term standing due to taking the prior term off and received non-punitive grades in the term in which they were referred.
4. A student had non-punitive grades in the prior term and received non-punitive grades in the term in which they were referred.

### **Participants**

The university had a Fall 2013 undergraduate enrollment size of 5,266. Eight hundred and fifty eight students were new incoming freshman. Of the 5,266 students 4,423 were full-time and 843 were part-time (Oregon University System Fact book, 2013). Graduate students were not part of the study and were not listed within the early alert system.

### **Procedure**

When a faculty or staff member refers a student to the student success specialist using the web-based system, the individual is offered a preset list of reasons for the referral. There are three radial button options for each question 1) “Yes,” 2) “No,” and 3) “Don’t Know.” Each question response is defaulted to “Don’t Know.” This allows the faculty or staff to answer only questions that apply while leaving the other questions as “Don’t Know.” These reasons are provided below. A “Comments” box was also provided at the bottom of the referral page so faculty and staff could add additional information related to the referral.

1. abrupt change in academic engagement and/or overall demeanor
2. Excessively tardy in assignment and/or attendance
3. Not attending class

- a. More than two absences?
- b. Are they consecutive?
4. Not actively participating in discussion/class
5. Not turning in/not completing assignments regularly
6. Failing assignments
  - a. More than two failures?
  - b. Are they consecutive?
7. In danger of failing school/multiple classes

After a referral was generated, an automated email was sent to the student notifying them of the concern. The email provided information regarding tutoring and withdrawal processes and important deadlines. The email also recommended that the student schedule an appointment with the student success specialist to discuss the issues further. After receiving the digital referral, known as a request for intervention or RFI, the student success specialist attempted to contact the student via telephone if the student had not scheduled an appointment or responded via email. If the student success specialist contacted the student via telephone, the situation was briefly explained and an in-person meeting was requested. While the in-person meetings were strongly recommended, meeting with the student success specialist was not mandatory and had no institutional repercussion on the student.

Typically three attempts were made to contact the referred student, which is consistent with the national standard at four-year institutions based on a study conducted by Fletcher (2012). This included the automated email sent to the student when the referral was submitted, one telephone call, and an additional follow up email. If the student did not schedule an appointment or respond, a digital note was attached to the referral and then archived. If the student scheduled an appointment, the student success specialist met with the student and provided support and guidance in the areas of concern.

**Analysis**

Because a large portion of early alert research is anecdotal (Fletcher, 2012), A comparison of the student's previous academic standing and the academic standing for the term in which they were referred was conducted. Ultimately removing personal accounts of the interventions and basing the analysis strictly on academic performance based on GPA and academic standing. At the conclusion of each term, academic standing for every student who was referred using the early alert system was assessed. For example, if the student was referred during the Winter term of 2014, at the conclusion of the Winter term, academic standing for that student was assessed for both Fall 2013 and Winter 2014. Registration for the subsequent term of the referral was also recorded, in addition to whether the student responded to the request for intervention by meeting with the student success specialist or academic advisor within the advising office.

For the purpose of this analysis, two populations were evaluated, 1) students who received an intervention by communicating with the student success specialist or another advisor regarding their referral, and 2) students who did not respond to an intervention request. After comparing each student's standing, the students were placed into one of three categories 1) successful, 2) not successful, and 3) neutral. Because multiple referrals could be submitted regarding the same student, duplicates within the system were identified and removed. During the Summer session, the early alert program was not used and thus, no data is provided for those terms.

**Results**

After analyzing the data, 732 requests for intervention were submitted between the Winter of 2013 and the Spring of 2014; averaging 146 referrals per term. In total, 672 students

were referred using the early alert system (see table 1). Of the 672, the advising office intervened with 279 students (42%); 393 did not respond to intervention requests (58%). The 42% response rate is consistent with other early alert research (Hudson, 2006). When evaluating the student population that received an intervention, 137 of the 279 were considered successful or 49%. One hundred and thirty one (47%) did not demonstrate positive academic progress and 11 (4%) were considered neutral (see table 1)

RFIs at a Glance: Table 1

	<b>Winter 2013</b>	<b>Spring 2013</b>	<b>Fall 2013</b>	<b>Winter 2014</b>	<b>Spring 2014</b>	<b>Totals</b>
<b>Total # of RFIs</b>	84	176	243	132	97	732
<b># of students referred</b>	73	158	226	122	93	672
<b>#interventions</b>	47	52	102	49	29	279
<b># of students who did not respond</b>	26	106	124	73	64	393
<b># of successful students</b>	41	66	107	51	33	298
<b># of non-successful students</b>	21	89	106	67	52	335
<b># of neutral students</b>	11	3	13	4	8	39

The population of students who did not respond showed an increased level of negative academic progression. Of the 672 referred students, 393 did not respond to a request for intervention and 52%, or 204, did not demonstrate positive academic progress. Additionally, only 41%, or 161, were considered successful and 7% (28) were considered neutral. In contrast, the student population that received an intervention had a 49% success rate; a difference of 8%.

When assessed term-by-term, beginning with the pilot in Winter 2013, analysis indicated a consistent increase in student success within the population of students who received an

intervention, compared to the population that did not respond (see table 2). Specifically, the population of students who received an intervention had a 10% higher success rate in the Winter 2013, compared to the population of students who did not respond. In the Spring of 2013 there was a slight 3% increase; Fall of 2013 showed a more promising number of 7%, Winter 2014 echoed with a 9% increase, and Spring 2014 indicated a 4% increase (see table 2).

Comparing Success Rates by Population and Term: Table 2

	Winter 2013	Spring 2013	Fall 2013	Winter 2014	Spring 2014
<b>(Met) # of students successful</b>	28 (60%)	23 (44%)	52 (51%)	23 (47%)	11 (38%)
<b>(Not Met) # of students successful</b>	13 (50%)	43 (41%)	55 (44%)	28 (38%)	22 (34%)
<b>Difference</b>	(10%)	(3%)	(7%)	(9%)	(4%)

When comparing the failure rates by population and term, there were some instances where the met-with population had a higher failure percentage than the not-met with population. Perhaps the most notable difference occurred in the pilot term of Winter 2013. Findings show a 15% higher rate of negative academic progress in the population that received an intervention, compared to the population that did not, 16 (34%), and 5 (19%) respectively; however, it is important to note that percentage is based on the number of students who received an intervention and the population that did not receive an intervention and these population numbers are not the same (see table 3).

Comparing Failure Rates by Population and Term: Table 3

	Winter 2013	Spring 2013	Fall 2013	Winter 2014	Spring 2014
<b>(Met) # of students not successful</b>	16 (34%)	28 (54%)	49 (48%)	24 (49%)	14 (48%)
<b>(Not Met) # of students not successful</b>	5 (19%)	61 (58%)	57 (46%)	43 (59%)	38 (59%)
<b>Difference</b>	(15%)	(4%)	(2%)	(10%)	(11%)

A notable difference with regard to neutral students was also discovered. Thirty nine of the 672 referred students were considered neutral, which makes up 6% of the total referred population. When comparing the population of students who received an intervention to the population that did not, there were twice as many neutral students in the population that did not receive an intervention (28 or 4%) compared to those that received an intervention (11 or 2%). While prior research has shown correlations with regard to student engagement and persistence (Conner et al., 2013; Engle & Tinto, 2008; Moreira, Dias, F. Vaz, & J. Vaz, 2013; Boretz, 2012; Community College Survey of Student Engagement, 2007; Swanson, 2006), persistence itself was not assessed in this study; however, the increase in neutral students who received non-punitive grades, including “W” grades for withdrawing, within the population that did not receive an intervention may indicate that increased student contact in this instance resulted in increased persistence and thus, increased student success in the population that received an intervention.

### **Discussion**

Limitations to this study are apparent, however, this is not uncommon among student success research as the complexities of the elements that shape such success are widespread. While the research focused on student success and potential financial gain, a detailed retention analysis was not conducted. Specifically, the reason why a student did not return was not investigated, which included determining if the student had graduated or not. Additionally, no satisfaction or feedback survey was offered to any of the students who received an intervention. Because of limited staffing and resources, in addition to the increased complexity of involving human subjects within research, the analysis was limited to archival data only, i.e., academic standing, interventions, tuition and fee amounts, and registration.

The timing in which a request for intervention was submitted and the term length, were notable elements that impacted this study. Instructors, on occasion, referred a student during the eighth or ninth week of a ten-week term. Often times the student was too far behind in their classes to recover. Promoting a proactive approach to faculty with regard to at-risk referrals is essential to the program's effectiveness. Universities that operate on semesters will likely have more time to assist a referred student; however, timing of a referral is essential for all institutions utilizing an early alert system. Lastly, a control group was absent from the analysis (students enrolled in the same courses who could have been referred). Despite the missing control group, research conducted at Columbia College and California State University, Stanislaus, found that early alert system referrals do identify students most at-risk (Pfleging, 2002).

### **Findings**

A financial analysis revealed a significant monetary benefit to the university. During the five terms, the early alert program supported 279 interventions in which the faculty or staff was concerned about the referred student's overall success. A financial analysis was conducted by assessing the tuition and fee costs of the subsequent terms for the 279 students who received an intervention, regardless of if they progressed to good academic standing subsequent to the term in which they were referred. The notion behind the method is that when a student was referred, the student was at-risk of failing and attrition. Any registration subsequent of the intervention could be seen as gained tuition and fees, assuming the student was in danger of attrition. As a result, the early alert system aided in the future tuition of approximately \$1.2 million. With notable financial implications such as these, it is no surprise the university doubled the yearly budget for its alert software and upgraded to more all inclusive student success system.

### **Next Steps**

While the data does not validate causation with regard to the relationship of early interventions and future registration of intervened students, the consistent increase in student success across all five terms within the population that received an intervention points to a certain level of correlation. Specifically, the results indicated an increase in student success within the population that received an intervention across all five terms, 60%, 44%, 51%, 47%, and 38%, compared to the population that did not receive an intervention, 50%, 41%, 44%, 38%, and 34%, respectively. Consequently, the findings support the notion that targeted student contact in academic advising promotes student success for at-risk students. Despite the growing research in the area of engagement, persistence, and student success, more research is needed to further identify the true extent of the relationships and provide a guide for best practices.



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