Evaluating the Effectiveness of Early Alert Midterm Grade Reports in Social Science Courses:

A Mixed-Methods Research Proposal

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Abstract

Although extremely common at two- and four-year postsecondary institutions across the United States, very little research has been undertaken to gauge the efficacy of so-called Early Alert midterm grade reports (Fletcher, 2012). Using a quasi-experimental design, the proposed mixed-methods evaluation seeks to quantitatively assess the effectiveness of a recently established Early Alert program at the College of the Sequoias. In a second, qualitative strand, the proposed evaluation aims to explore some of the causative theories (i.e. changes in student motivation and behaviors) associated with the justification of Early Alert programs using focused group interview techniques.
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A large body of recent research suggests that, while nearly all of the economic benefits associated with an undergraduate education accrue to those who complete their program of study (U.S. Department of Labor, 2012), graduation rates within public post-secondary institutions have fallen to unacceptably low levels in recent years (see Bowen, Chingos, & McPherson, 2009). Given the fact that completion rates among baccalaureate students beginning their education at 2-year colleges are even lower than the national average (Long & Kurlaender, 2009), academic alert programs have been established at a number of California Community Colleges with the intention of increasing student retention and success rates (Schwartz, 2010). These programs aim to identify students at risk of failure early on in an academic term. Once identified and alerted, it is hoped that these students will be motivated to take action to improve their performance. In the 2008-09 academic year, the College of the Sequoias (COS) instituted such a system.

The purpose of the proposed mixed-methods study is twofold. First, using data collected from the college’s student information database, the study intends to quantitatively evaluate the effectiveness of the Early Alert program at COS. Second, using focused group interviews involving students who have received midterm grade reports, the study seeks to begin to explore qualitatively the factors contributing to the effectiveness (or ineffectiveness) of the policy. If the program is empirically successful, such evidence will likely encourage its adoption among faculty. If evidence of success is lacking, a consideration of alternative uses for the resources devoted to the program may be warranted. Moreover, an exploration into why the program is working (or not) may inform the improvement of the program or the development of other
programs on campus. Finally it is worth noting that any improvement in student success at COS will disproportionately affect historically and socioeconomically disadvantaged groups.

**Review of Literature**

As Posavac (2011) observed, effective program evaluations need to be grounded in program theory. Moreover, Posavac describes program theory as either normative (i.e. the justification or rationale for the program) or causative (i.e. the relationships between the program activities and the program outcomes). In a wide-ranging review of Early Alert programs in the US, Alley (1997) identified a number of normative program theories beyond the improvement of student’s final course grades. These additional justifications include: (a) the opening of communication between instructor and student, (b) the demonstration of concern on behalf of the instructor and the institution, (c) the provision of additional opportunities for student self-evaluation, and (d) support for academic advising. To these normative theories, Herman (2011) offers the causative theory that the Early Alert might motivate students who receive them to change learning and study behaviors in ways that contribute to academic success and retention (i.e. seeking tutoring). While broadly in agreement with Herman, Alley also speculates that, as students who receive Early Alert reports may give up hope of passing the course, midterm grade reports may, in fact, have a demotivating effect for some.

Although implementation of Early Alert programs is relatively widespread in higher education (Alley, 1997; Fletcher, 2012; Simons, 2011) and though anecdotal reports are not uncommon in trade publications marketed to the academic administrator audience (see Chappel, 2010; “Create an Early Alert System,” 2009), very few formal research programs have been carried out to explore the theoretical rationale for these programs or to test their efficacy (Fletcher, 2012). A search of the Education Resources Information Center (ERIC) database
using the search term “early alert” returned only 35 results. Of these, 29 were deemed to be relevant; however, only 12 had been published since 2000. A similar search using the search term “midterm grade” returned only one relevant study, which had been published in 2002.

Within this small body of research, conflicting results regarding outcomes have been returned. For example, using a quasi-experimental correlational design involving first-year students at Muskingum College, Nowakowski (2006) found that final grades tended to rise following a student’s receipt of a midterm grade report. On the other hand, a controlled experimental study conducted by Alley (1997) involving undergraduates enrolled in developmental mathematics courses at Middle Tennessee State University found no statistically significant difference in final grades between students who did, and did not, receive midterm grade reports. Moreover, researchers have found the evidence for the causative theoretical rationale to be lacking. In other words, it seems that, though the institutions do seem to succeed at identifying at risk students, and though Early Alerts may influence these students’ motivation or behavior, it is not clear that behavioral changes translate into improved academic performance. In a survey-based study conducted by Eimers, (2000), students receiving Early Alert notices generally reported that receipt of the grade report during the fifth week of the semester motivated them to take actions such as increasing their time spent studying. Eimers also reported, however, that these additional actions had no measurable influence on improving grades. Alley reports similar findings: a majority of the students surveyed reported that they made changes in their study habits as a result of receiving an Early Alert, though (as mentioned above) the statistical tests she conducted did not show the midterm grade reports were effective at raising students’ final grades.
Research Questions

Given the limited research on the effectiveness of Early Alert midterm grade reports on improving academic performance, the initial quantitative research question for the proposed study is as follows:

(a) Does the College of the Sequoias’ Early Alert program result in improved academic success?

In addition, the following emergent questions, exploring the causal relationships between midterm grade reports and academic performance, will be addressed during a subsequent qualitative research strand:

(b) If evidence exists of the program’s effectiveness, how do midterm grade reports impact student motivation and/or academic performance? (e.g. what types of behaviors are instigated and how do these translate into academic success?)

(c) If evidence for the program’s effectiveness is absent, why do midterm grade reports fail to motivate students to change their behavior and/or result in improved academic outcomes?

Rationale for Use of Mixed-Methods Research Design

The justification for the use of mixed-methods in the proposed study is based on two complementary positions. First, the selection of an appropriate mixed-methods design is fundamentally driven by the nature of the research questions under investigation (Teddlie and Tashakkori, 2009). Given the quantitative character of question (a), the essentially exploratory features of questions (b) and (c), and the dependence of questions (b) and (c) on the disposition of question (a), a sequential design with a quantitative methodological priority (QUAN → qual) seems appropriate in this case. Under these conditions the rationale for the employment of
mixed-methods within the proposed study seems to fall clearly within what Greene, Caracelli,
and Graham (1989) have termed *development*. Moreover, within this taxonomy of mixed-
methods rationales/purposes (the four others being *triangulation, complementarity, initiation,*
and *expansion*) the authors maintain that when a research program is under development,
sequential designs best leverage the strengths of each individual strand. Further, Leech,
Onwuegbuzie, and Combs, (2011) have pointed out that most complex phenomena (e.g. research
questions from the fields of education, health care, organizational behavior, etc.) generate both
qualitative and quantitative information, and therefore, lend themselves to both qualitative and
quantitative analysis. Moreover, the combination and triangulation of different data sets, which
is inherent to mixed-methods research, greatly improves the transferability, generalizability, and
practical significance of mixed-methods research programs compared with monomethod
approaches (De Lisle, 2011). Second, such QUAN → qual designs have proven to be popular
and effective within the field of educational research. In a decade-long, multidisciplinary review
of mixed-methods literature up to the year 2005, Truscott et al. (2010) found that this sequential,
quantitative-dominant approach was common in the evaluation of educational policies and
programs and suggest that this particular form may be especially viable within this domain.

**Methodology**

**Context**

The College of the Sequoias is a publicly funded, open-access community college serving
an agriculturally oriented rural community geographically located between the Fresno and
Bakersfield metropolitan areas along California State Route 99. The college enrolls
approximately 10,000 full-time equivalent students (FTES), equal to an approximate 19,000
unduplicated student head count, who pursue a variety of educational goals including associates
degrees, career technical training, and basic skills remediation.

The student body reflects the racial diversity of Kings and Tulare counties with 34 percent of the college’s students identifying themselves as White, 52 percent as Hispanic, and the remainder roughly equally divided between African-Americans/Blacks and Asians. Significantly, fully 60 percent of first-time students at the college placed into a basic skills-level (remedial) English course. During the 2010-2011 academic year, the success rate (completion with a grade of “C” or better) across all courses of 67 percent was virtually identical to the statewide average of 68 percent. The overall course completion rate, 89 percent, was marginally higher than the state wide average of 85 percent.

Participants/Sample

Quantitative strand. The establishment of the Early Alert program at COS in the Fall 2008 semester provides a unique opportunity to conduct a so-called natural experiment to test the effectiveness of program. Within the initial quantitative strand, the sample will be comprised of all students who were enrolled at COS during the 2007-2008 academic year and subsequently enrolled in transfer level social science courses at the college in the 2008-2009 school year when the Early Alert midterm grade report program was established. Student records will be divided into two treatment groups, those who received midterm grade reports during the 2008-2009 school year and those who did not.

Qualitative strand. Focus groups will be constructed by purposefully sampling students who have received an Early Alert midterm grade report within two semesters from the time the focus group interviews are conducted. Within the research literature, sample sizes (both within individual focus groups and the overall research program) vary considerably. For example, with respect to individual groups, Palmer, Larkin, de Visser, and Fadden (2010), argue that six to ten
participants per group are ideal. At the other end of the spectrum, others report success with groups as large as 15 – 30 (Chioncel, van der Veen, Wildemeersch, & Jarvis, 2003; Groenewald, 2004; De Visser, & Smith, 2007). For the proposed qualitative strand, three focus groups of 15 to 20 individuals will be constituted. However, additional focus groups may be organized if saturation has not been achieved by the conclusion of the third set of interviews as suggested by Webb and Kevern (2001).

**Role of the Researcher**

In addition to my role as a researcher within the proposed study, I am also a tenured faculty member in the Social Science Division at COS. It is important to recognize that in my role as a faculty member, to the extent that I am evaluated (at least in part) based on the success and retention rates of my students, I have a personal interest in the policy under study. In this regard, I may be influenced by a subconscious desire to advocate for any policy which may increase these statistics – even if at an unfair cost to students. In an effort to ensure both objectivity and ethical practice, the phenomenological technique of *bracketing*, whereby researchers acknowledge their biases and consciously attempt to approach their research questions with an open mind (Creswell, 2013), will be employed.

**Ethical Procedures**

Along with the National Research Act of 1974, the principles outlined in the Belmont Report – respect of persons, beneficence, and justice – have provided the foundation for current ethical and legal considerations associated with research involving human participants (U.S. Department of Health and Human Services., n.d.). In applying the principle of beneficence, the maximization of benefit and minimization of risk, Creswell (2013) makes the point that ethical considerations have important implications from the earliest stages of a research program in the
identification of the research problem. Within the quantitative strand of the proposed research, data will be extracted from the college’s student information database without personally identifiable information (i.e. students will be given a unique identification number, and names or other identifiers will be redacted). With respect to the qualitative strand, the risks are deemed minimal (probably no greater than to which a participant would be exposed in a typical classroom environment). Moreover, while there may be no direct benefits to the individual participants, there may be an indirect benefit to the student body if the research is successful in positively influencing educational policy.

Respect for persons in a qualitative research environment suggests participants be well-informed of those risks and benefits and that their involvement is voluntary. These issues of risk disclosure and the voluntary nature of any participation will be emphasized at several points throughout the research process, beginning with the invitation to participate. The information will be repeated again, in writing vis-à-vis the informed consent document, and orally before commencing the focus group or individual interviews.

Reflecting the principle of justice, Creswell (2013) also points out that in the early stages of planning, researchers are ethically obligated to consider the consequences of the research program on stakeholders. In the data collection phase of a research project, an important ethical consideration involves the maintenance of confidentiality. Often the quantitative and qualitative data collected and analyzed is sensitive and disclosure might be potentially harmful to a participant’s economic or employment status. In this case, no such sensitive information will be collected; nevertheless, all data collected will be stored in an encrypted and password-protected digital file.

Selection of Participants
The selection of student records to be analyzed during the initial quantitative phase will involve the submission of the COS data request form to the Office of Institutional Research and Planning. Within the second, qualitative phase, the following protocol will be used: First, the Social Science Division Chair will be contacted regarding identifying faculty who would distribute a flyer with the researcher’s email address in social science classes to recruit students for the focus group. To be eligible to participate, students must have received an Early Alert midterm grade report within the past two semesters. Next, such self-identified volunteers will be provided with a consent form and the receipt of an Early Alert within the specified period will be confirmed by Office of Institutional Research and Planning. Finally, three focus group interview periods will be scheduled and volunteers will be asked to commit to one of these sessions.

**Data Collection Techniques**

**Quantitative Strand.** To evaluate the effectiveness of the Early Alert program in increasing student grades, extant student records from the 2007-2008 and 2008-2009 academic years will be extracted from the college’s computerized student information database, BannerWeb. The data extracted will be comprised of the following variables: (a) a unique number to anonymously identify each student, (b) the student’s cumulative grade point average (GPA) at the conclusion of the Spring 2008 semester, (c) whether or not the student received an Early Alert midterm grade report in a transfer-level social science course during the 2008-2009 academic year, (d) if the student did receive an Early Alert in a social science course, the final grade assigned for that course, and (e) if the student did not receive an Early Alert, the final grade in a randomly selected social science course during the 2008-2009 academic year. The data thus collected will be imported into SPSS and analyzed.
**Quantitative Strand.** To explore potential explanations for the policy’s effectiveness (or ineffectiveness) from the student perspective, semi-structured focus groups will be utilized to collect data during qualitative strand of the proposed research project. Data collected and analyzed during the first strand will be integrated by way of their use in the development of the semi-structured interview questions employed during the second. In other words, the results of the quantitative strand will inform the group interview’s exploration of the causes for either the success or failure of the program.

Using focus group methods described by Clark and Redmond (1982), a portion of the analysis will be embedded within the data collection event. This is accomplished by first asking individuals form small subgroups of four to five non-acquainted participants. Within each sub-group, one member is chosen to record the responses generated. After approximately ten minutes of small-group discussion, the greater group reconvenes and each sub-group reports and responses are summarized and recorded by the facilitator. At this point, the facilitator may ask for comments, suggestions, or additional details until an accurate understanding is generated. After all sub-groups have reported the responses are discussed and analyzed by the entire group. With the facilitator recording and summarizing the discussion for all to view, participants offer criticism and identify theme. Participant support/agreement is gauged using rough percentages generated by a show of hands. The facilitator may amend what has been recorded as necessary to generate an accurate reflection of participant’s understandings.

Though the use of focus groups has been recognized as potentially problematic (see, Tomkins & Eatough, 2010), the methods advanced by Clark and Redmond (1982) seem well-suited for use in exploratory research contexts. This is because the iterative interactions between the researcher and the participants, and between participants themselves, provide an abundance
of opportunity for engaging in member checking and triangulation of the data. In addition, some researchers have noted that within the context of the focus group, some participants may be moved to think more deeply about their own experiences after hearing the experiences of others (Pier, Junor-Clarke, Thomas, & Vidakovic, 2007).

Questions planned to facilitate both the focus group and individual interviews closely parallel the research questions presented above and include: (a) “Think about how you reacted when you received the Early Alert. Describe a specific behavior(s) that illustrates how receiving the midterm grade report affected you? For example, did receipt of the letter changes in attendance patterns or study habits, seeking tutoring, attending instructor’s office hours, etc.”; (b) “If receipt of the midterm grade report did result in changes in your academic behaviors, do you believe that these changes resulted in an improvement in your final grade? If so, how; if not, why not?”; and (c) “If receipt of the midterm grade report did not result in changes in your academic behaviors, why not?”

All data generated will be both maintained in its original format (and scanned if written) as well as transcribed. Microsoft OneNote may offer a fairly powerful and convenient method for organizing the data and for its analysis. With the some exceptions (i.e. concept mapping), this software offers most of the functionality with respect to the features Creswell (2013) suggests for consideration when choosing a software solution to aid in qualitative data analysis.

**Data Analysis Techniques**

**Quantitative Strand.** In general terms an independent measures t-test will be employed to test for the effect of Early Alert midterm grade reports (IV) on final grades (DV) in social science courses at COS. The data to be analyzed represent historical records retained in the college’s computerized student information database. Here, random assignment to treatment and
control groups is not possible and, thus, the proposed study is characterized as a quasiexperimental design. Though some authors (see Krause 2008) have cautioned that regression toward the mean (RTM) is not necessarily inevitable in quasi-experimental designs, Posavac (2011) observes that regression toward the mean represents a significant threat to validity when “programs are aimed at those people who are especially in need of help” (p. 178). Because midterm grade reports are targeted to at risk students, RTM certainly represents potential threat. RTM will be controlled by transforming final course grade points by subtracting student’s cumulative GPA. By doing so, improvement in academic performance, relative to the students historical average prior to the establishment of the program, will be measured. In other words, if the Early Alert program is truly effective, improvement in students’ academic achievement over and above their achievement prior to the existence of the program should be observed.

**Qualitative Strand.** In addition to the process of the identification of themes and the generation of clusters of meaning embedded within the focus group process, the written responses generated by each sub-group will be collected. These artifacts will be analyzed for consistency with the analysis generated within the focus group. Moreover, because time will necessarily be limited, all responses generated within the sub-groups may not receive attention within the context of the focus group. Thus, the written responses will be analyzed and coded using the themes generated during the focus group session. Finally, the data from all three focus groups will be used to synthesize a representation of the underlying phenomenon (see Chioncel, van der Veen, Wildemeersch, & Jarvis, 2003; De Visser, & Smith, 2007).

**Verification of Data Quality/Trustworthiness**

**Quantitative Strand.** As discussed above, the threat from RTM will be controlled by transforming the dependent variable. Other threats to internal validity with respect to the first
quantitative strand will be controlled by the quasi-experimental control group design. History, maturation, and attrition should affect both groups equally. The quasi-experimental design will allow for a very large sample size to be subjected to analysis. Thus, post-hoc reselection, as described by Schillewaert and Meulemeester (2005), could be employed to control for selection bias. (With post-hoc reselection, large data sets can be resampled and stratified to make the groups equivalent with respect to a variable of interest – in this case GPA.) Because the dependent variable, final course grade, will be directly measured, instrumentation threats do not appear relevant. Likewise, because a pre/post-test method is not used here, the testing threat is not applicable.

**Qualitative Strand.** Lincoln and Guba (as cited in Teddlie, & Tashakkori, 2009) operationalize the concept of trustworthiness by way of 10 procedures: prolonged engagement, persistent observation, triangulation, member checking, peer debriefing, negative case analysis, reflexivity, thick description, audit trails, and referential adequacy. As outlined above, member checking can be effectively embedded within both focus group (see Clark, Redmond, & Washington Univ., 1982) and interview (see McConnell-Henry, Chapman, & Francis, 2011) data collection techniques. In addition, triangulation across participants can be incorporated into the focus group methodology (Clark, Redmond, & Washington Univ., 1982), while triangulation across methods will be accomplished by the use of the results from the quantitative phase to develop the initial questions for conducting the semi-structured focus groups interviews for data collection within the qualitative phase. Transcripts created using both collection methods will serve to generate an audit trail. Finally, I will certainly engage my colleagues in the Social Science Division, the academic administration, and student services in discussions regarding the
analysis generated with the intention of using peer debriefing (see Creswell, 2013) to support the validity of any conclusions drawn.

Discussion

Data Interpretation.

Quantitative Strand. The independent measures t-test proposed is associated with the following null hypothesis: the average end of course grades in social science classes (adjusted for GPA) for students who did receive an Early Alert midterm grade report will be less than or equal to the average scores for those students who did not receive a midterm grade report. Alternatively, a higher mean score for the group receiving the Early Alert will be interpreted to support the hypothesis that midterm grade reports have a positive effect on academic achievement.

Qualitative Strand. As described above, the sequential design of the proposed evaluation is intended to allow the integration of the findings from the quantitative phase to be integrated into and inform the development of the subsequent qualitative phase. Because very little research has been undertaken addressing student perspectives and experiences associated with midterm grade reports in general, and with respect to the attendant causative theories in particular, the proposed research is necessarily exploratory. Thus, existing research specific to the student perspective is not available to inform interpretation. Student surveys regarding student attitudes have been conducted by both Alley (1997) and Eimers (2000), and interpretive conclusions from the present study could be compared and contrasted with findings from this limited body of research. Finally, as outlined above, member checking and peer review will be employed to ensure the involvement of stakeholders in process of interpretation.

Dissemination of Findings
The proposed study is potentially of interest to diverse audiences. Specific groups with potential interest at the local level include the student community, policy makers (e.g. the college’s Board of Trustees, Academic Administrators, the Academic Senate, and the curriculum committee), and practitioners (e.g. teachers and academic counselors). With regard to program evaluations, Posavac (2011) recommends the provision of both written and personal communication of findings to various stakeholder groups. With respect to the former, a large proportion of the student community could be efficiently and effectively reached via the campus’ student newspaper. Here a brief summary of the overall findings and excerpted quotes reflecting the major themes could be incorporated into a newspaper story reporting student experiences with the Early Alert program. With respect to the latter, the local policy makers and practitioners identified above all schedule regular meetings, at which an oral presentation of the study’s results could be presented. In addition, documentation and the written report could be posted to the college’s intranet site. Each of these local group’s informational needs could be evaluated by interviewing potential audience members regarding the relevance of the information.

Evidence suggests that Early Alert and midterm grade reporting programs are ubiquitous in higher education in the United States (Fletcher, 2012). Although the proposed research is intended to serve as an evaluation of a specific program in time and place, others within the higher education community may be interested in both the data collected and the analysis performed. To reach this community of practitioners and researchers publication in a peer reviewed academic journal would be necessary.
References


Tomkins, L., & Eatough, V. (2010). Reflecting on the use of IPA with focus groups: Pitfalls and potentials. *Qualitative Research in Psychology, 7*(3), 244-262.


