

Embedded Tutoring's Impact on Academic Motivation in Corequisite English

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Abstract

This study examined the impact of writing coaching interventions on students' intrinsic motivation across two academic pathways: transfer and technical programs at a community and technical college. Using a pre–posttest design, students completed the Academic Motivation Survey (AMS) – College Version prior to and following participation in writing coaching. Overall intrinsic motivation was measured as a composite of three intrinsic subscales: motivation to know, motivation toward accomplishment, and motivation to experience stimulation. Paired samples analyses revealed differential effects by student population. Transfer students demonstrated a small, non-significant increase in intrinsic motivation following coaching, with no relationship between the number of coaching sessions and motivational gains. In contrast, technical students exhibited a statistically significant increase in intrinsic motivation, and coaching frequency was positively associated with motivation gains. Subscale analyses indicated that gains among technical students were driven primarily by increased intrinsic motivation toward accomplishment. These findings suggest writing coaching may be particularly effective in supporting motivational development among students in technical programs and highlight the importance of contextualized academic support models that emphasize competence, progress, and task completion. Implications for embedded coaching practices and future research on motivational outcomes in workforce-oriented programs are discussed.

Keywords: academic motivation, community college, technical programs, transfer programs, tutoring, writing coaching

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AI Usage Disclosure Statement: The researchers used *Turbo Scribe AI* to generate a typewritten transcript of an audio recording of the focus group interview conducted for this study. Additionally, ChatGPT was used to conduct a t-test of data entered manually into Excel to calculate statistical significance in the absence of access to statistical software programs.

In the age of higher education accountability, Americans demand to know the return on their investments; specifically, students, *vis-à-vis consumers*, want to know their job prospects and earning potential (Oreopoulos & Petronijevic, 2013). The community college has been America's answer for many students seeking that information, particularly those who pursue a degree or short-term credential in a technical program – a course of study designed to prepare students for a specific career that requires applied skills and hands-on training rather than primarily academic or theoretical knowledge. Technical programs are directly tied to the workforce, preparing students for jobs in areas such as healthcare, welding, automotive technology, and business. In two years or fewer, students receive classroom instruction and hands-on skill training that frequently leads to incumbent employment opportunities for students in apprenticeships and/or successful hire after graduation, often in high-paying industries like utilities, healthcare, and information technology.

The traditional connotation of college often omits opportunities such as these, and the community college has historically fought against the stigma that its quality is academically inferior to that of the university (Rose, 2021; Thelin, 2019). With a focus on economic development and supporting the future workforce within their service areas, community colleges prioritize opportunities for adult learners to work and learn in fields that produce sustainable living wages. However, the promise of high workforce placement after graduation comes with the paradox of low credential completion rates; while 100% of students who apply for admission to community colleges are admitted, only 13% complete a credential within two years (Jacobs-Pinson, 2024). Numerous barriers, whether academic or non-academic in nature, impact students in corequisite English courses in the community college; these barriers negatively impact student success, persistence, and completion (Hyman, 2025). Technical program students in corequisite courses may face even higher stakes, as required enrollment in corequisite courses is often perceived as an obstacle to enrollment in programmatic courses, which are courses that fulfill students' personal interests and are more directly connected to their chosen career paths. Because an English course does not involve equipment, tools, or industry-specific training, technical students tend to view it as a detour, rather than a step toward degree completion. Although the skills gained in college composition courses are essential for long-term success in the workforce, technical students may not see the coursework as valuable because they came to college specifically to pursue skills in their intended fields of employment (Hyman, 2025). Therefore, the layered complexity of the journey toward earning a technical credential at a community college while being enrolled in corequisite courses is worthy of further examination, specifically related to how that journey is shaped by academic motivation and the receipt of distinct interventions when compared to experiences of non-technical (transfer) students under the same circumstances. For students enrolled in corequisite models, exposure to academic coaching and/or tutoring is an intervention that is typically part of their college experience (Daugherty et al., 2018).

The goals of this mixed-methods study were to determine if students who received embedded tutoring services displayed increased academic motivation and whether the degree of motivation varied between students in technical programs and non-technical programs. Specifically, this study sought to answer the following research questions:

1. How does participation in embedded tutoring, delivered through in-class workshops or individual coaching sessions as part of a corequisite English course, affect the academic

motivation of community college students in technical programs compared to those in non-technical (transfer) programs?

2. To what degree does academic motivation correspond with retention in corequisite English courses?
3. Is there a correlation between the academic motivation and retention of community college students in technical programs taking corequisite English courses? How does this compare with the correlation of academic motivation and retention of community college students in non-technical (transfer) programs taking corequisite English courses?

The researchers sought to use the findings to provide recommendations for increasing academic motivation and reducing withdrawal rates among technical students in corequisite English courses.

Literature Review

Tutoring and Gateway Course Success

Research consistently demonstrates that structured academic support interventions positively influence student success in gateway and developmental coursework. Across the literature, embedded tutoring, supplemental instruction, learning communities, and other forms of academic support have been associated with higher grades, increased course completion, stronger engagement, and improved retention outcomes (Channing & Okada, 2020; Giraldo-García & Magiste, 2018; Miller, 2020; Savarese, 2021; Varty, 2021). Collectively, this literature positions tutoring not only as an academic intervention, but also as a strategy to support persistence for academically vulnerable students in foundational courses.

A key finding across studies is that academic support is most effective when it is embedded within the course rather than offered as an optional service. Embedded tutoring and course-linked interventions provide sustained, contextualized support aligned with instructional expectations, resulting in greater student engagement and improved performance (Channing & Okada, 2020; Varty, 2021). Similarly, time spent in structured academic support is positively associated with course success, suggesting that consistent engagement reinforces learning and reduces the likelihood of course withdrawal (Giraldo-García & Magiste, 2018).

These findings are particularly relevant for examining retention in gateway courses such as corequisite English. While prior research establishes that tutoring is associated with improved course completion and persistence, fewer studies explicitly examine how these outcomes may be linked to students' motivational processes, particularly across different student populations. This limitation is directly relevant to the present study's examination of the relationship between motivation and retention.

Tutoring and Student Self-Perception

In addition to academic outcomes, a growing body of literature highlights the role of tutoring in shaping students' self-perceptions as learners. Participation in tutoring has been associated with increased confidence in writing, research abilities, and academic habits (Epstein & Draxler, 2020; Insua et al., 2018). These findings suggest academic support interventions may strengthen students' self-perception alongside measurable academic outcomes.

Research examining growth mindset, belonging, and self-esteem further supports this connection. Embedded tutoring has been linked to increases in growth mindset and improved academic performance (Miller, 2020), while inclusive support practices strengthen students' sense of belonging in composition courses (Epstein & Draxler, 2020). These affective outcomes are significant because they influence engagement, persistence, and students' willingness to seek continued academic support.

At the same time, the literature emphasizes that tutoring programs must be intentionally designed to achieve these outcomes. Effective tutoring requires clearly defined tutor roles, structured training, and collaboration with faculty and campus partners (DeLoach et al., 2014; Savarese, 2021). When integrated within broader systems of academic and emotional support, tutoring can address both skill development and affective barriers, reinforcing students' connection to the institution (Insua et al., 2018).

Despite these insights, research has not fully examined how changes in self-perception translate into measurable shifts in academic motivation, nor how such changes differ across student groups. This gap is particularly relevant to the first research question, which investigates how embedded tutoring influences academic motivation among technical and transfer students.

Self-Efficacy, Motivation, and Academic Persistence

The relationship between embedded tutoring and academic motivation among technical students is less extensively studied, particularly within the context of embedded tutoring; however, motivation and self-efficacy theories provide a strong framework for examining these connections. Motivation is widely conceptualized as a dynamic and context-sensitive construct influenced by environmental support, perceived competence, personal values, and social experiences (Schunk, 1991; Urdan & Bruchmann, 2018; Vallerand & Bissonette, 1992). This perspective aligns with tutoring research suggesting academic support interventions may influence not only achievement outcomes but also students' confidence, engagement, and persistence.

Building upon Bandura's (1977) theory of self-efficacy, Schunk (1991) argued that external support systems—including tutoring, workshops, and office hours—enhance motivation by reinforcing competence and providing opportunities for successful performance. Similarly, Vallerand and Bissonette (1992) found that intrinsic motivation is positively associated with persistence, while amotivation is linked to withdrawal from coursework. These findings suggest a meaningful relationship between academic motivation and retention, supporting the need to examine how these constructs interact. Together, these studies suggest tutoring may strengthen self-efficacy by reinforcing academic competence, reducing fear of failure, and increasing students' willingness to persist through academic challenges.

Urdan and Bruchmann (2018) further emphasized that motivation is shaped by environmental and cultural contexts, challenging the notion that motivation operates uniformly across student populations. This distinction is especially important in community college settings, where students pursue diverse educational goals. For example, students in technical or workforce-oriented programs may prioritize immediate employment outcomes, credential completion, or skill acquisition over traditional academic pathways (Haviland & Robbins, 2021). These differences suggest that motivational drivers—and their relationship to persistence—may vary across program types.

The literature also consistently connects motivation to persistence and academic satisfaction. Wells (2025) argued that motivation and satisfaction significantly influenced persistence, reinforcing the importance of examining how students experience gateway coursework over time. Vallerand and Bissonette's (1992) study further established motivation as a predictor of persistence through use of the Academic Motivation Survey (AMS) – College Version. Students with higher intrinsic motivation are more likely to persist, while those with greater amotivation are more likely to withdraw (Vallerand & Bissonette, 1992). Because motivation is influenced by perceived ability, interventions that build confidence may improve persistence, supporting the use of embedded tutoring as a motivational strategy in corequisite English courses.

Research Gap

Although existing research establishes strong connections between tutoring, academic success, and student self-perception, several critical gaps remain. First, while tutoring has been widely studied as an academic intervention, fewer studies directly examine its impact on motivation and motivational change over time, particularly within embedded tutoring models. Second, although affective outcomes such as confidence and belonging are acknowledged, they are often treated as secondary rather than central outcomes of academic support interventions.

Most notably, there is limited research focusing specifically on technical and workforce-oriented students, despite their significant presence in community colleges. Much of the existing literature centers on developmental or transfer-oriented populations, leaving unanswered questions about how academic support influences students whose goals are closely tied to career preparation, credential completion, and workforce entry. These students may experience distinct motivational pressures related to employment, financial responsibility, and accelerated program structures, which are not fully captured in current research.

Given these gaps, the relationship between embedded tutoring and academic motivation among technical students in corequisite English courses remains underexplored. Examining this relationship may provide important insights into how academic support influences not only performance, but also motivation, educational engagement, and persistence among a population that is central to the mission of community colleges.

Methodology

Research Design

This mixed methods study incorporated longitudinal quantitative research, utilizing students' responses to the AMS – College Version (Vallerand et al., 1992). This validated, open-source survey instrument was selected for this study to capture a “description of trends, attitudes, and opinions of a population” (Creswell & Creswell, 2023, p. 158). The instrument assesses various factors that may contribute to students' intrinsic and extrinsic motivations, including knowledge, accomplishment, and intellectual stimulation (Vallerand et al., 1992). It also allows for examination of identified or introjected extrinsic motivations and amotivational factors (Vallerand et al., 1992). The AMS is “a highly reliable and widely used instrument” relevant to the study of educational psychology (Zeng & Yao, 2023, p. 45).

Students participating in this study completed the survey twice; scores were calculated to measure repeated observations of the same variables (e.g., academic motivation) over a single semester. The researchers used ChatGPT to conduct a t-test of data entered manually into Excel to calculate statistical significance among changes in the participants' mean scores on the seven subscales of the AMS – College Version from the first and second administration of the survey. To validate the data, a Shapiro-Wilk test was performed to determine if the assumption of normality was met (Shapiro & Wilk, 1965).

The study also incorporated a qualitative element. The researchers conducted a focus group interview with voluntary participants from the sample. Using guiding principles from Creswell and Creswell's (2023) description of qualitative research, the researchers "focus[ed] on learning the meaning that the participants hold about the problem or issue" (p. 193). The focus group questions were constructed with an emergent design, which allowed the researchers to delve deeper into themes elicited by the participants (Creswell & Creswell, 2023). The participants' responses were thematically coded, both inductively and deductively, to assess the impact of embedded tutoring on their academic motivation in corequisite English. Participants engaged in member checking by reviewing and verifying the accuracy of an interview transcript provided by the researchers (Creswell & Creswell, 2023).

Site and Participants

This study was conducted at a mid-size comprehensive community and technical college in Kentucky with permission from system-level Human Research authorities and the college president. The institution offers 22 programs of study and has six campuses which serve 10 counties. Credentials offered include an Associate in Arts (AA), Associate in Science (AS), Associate in Applied Science (AAS), and a variety of diplomas and certificates. In the 2024-2025 academic year, the institution served 9,022 students, unduplicated, with more than 60% seeking credentials and nearly 35% of those students still enrolled in high school¹ (KCTCS Decision Support System, 2025).

Participants in the survey were students who placed into the IRW 100: Integrated Reading and Writing corequisite course, taken concurrently with a paired section of the ENG 101: Writing I gateway course in the Fall 2025 semester. The researchers used voluntary sampling; only students aged 18 and older who wished to voluntarily complete the survey were included in the study. The sample consisted of 146 students (n=146) enrolled in one of 10 sections of the IRW 100/ENG 101 pairing. These students had a high school grade point average (GPA) between 2.0 and 2.9 or placed into the corequisite course based on other measures, such as Accuplacer or ACT scores (Hyman, 2023). Nearly 69% of participants were subject to a local practice of limited enrollment totaling nine credit hours; this placement is based on reading placement scores or disaggregated GPA, underscoring the academic underpreparedness and vulnerability of this population of students. All participant data for the study was maintained on password-protected drives and no personally identifying information about the participants is presented in the data. For the qualitative research portion of this study,

¹ Data obtained from KCTCS Decision Support Systems (DSS) is accessible only by System employees with designated access level, such as some of the researchers for this study. The link to the information is provided on the References page as a citation but will not be accessible to external audiences.

participants self-selected pseudonyms and personally identifying information presented in their interviews is limited to demographics and common student experiences.

Institutional enrollment data shows that 183 students were enrolled across those 10 selected sections, with 91 students (49.8% of the sample) enrolled in technical programs. Of the remaining 50.2% of students enrolled in the IRW 100 sections surveyed in this study, 76 were pursuing an AS degree. These students were potentially in a holding pattern, waiting to accrue enough credit hours to apply to a selective admissions program in one of the Allied Health fields. The other 16 students were pursuing an AA degree. A total of 125 students (68.3%) received federal financial aid, while an additional 31 students (16.9%) did not complete the requisite paperwork, although at least nine of them were Pell-eligible.

Data Collection

The AMS – College Version was first administered during the week of August 25, 2025 as a survey in 10 sections of ENG 101: Writing I courses paired with the IRW 100: Integrated Reading and Writing corequisite. Faculty received packets at a department meeting that included informed consent forms and a printed copy of a slide deck that was also distributed via email. Participation was limited to students who were 18 years of age or older, and each student was required to sign a consent form prior to voluntarily completing the survey. During class time, faculty displayed a QR code and survey link on the slide deck and invited students to complete the survey using personal laptops or cell phones. Computer labs were made available by prior scheduling, if necessary. On average, the survey required no more than 20 minutes to complete, which included time for reading and signing the informed consent document. Using the same process as the first administration of the AMS – College Version, the second administration of the survey took place during the week of December 5, 2025. Eligible students who completed the AMS – College Version previously were given the option to take the survey again.

To further explore the impact writing coaching/tutoring interventions had on student motivation, a qualitative component was added to capture students' voices and perspectives and to ascertain the meaning they assigned to their unique experiences (Creswell & Creswell, 2023). On October 14, 2025, a focus group interview was held in the campus library. For approximately an hour, the researchers met with four student participants who were aged 18 or older and had signed consent forms on file; each participant had completed the first round of the AMS – College Version survey and volunteered to participate in the focus group by voicing interest to their professors. A total of nine students initially volunteered, but only four attended. Using self-selected pseudonyms, the participants answered a series of questions relating to their experiences in corequisite English and working with a writing coach in the classroom and the Learning Commons. The interview was audio-recorded, and a transcript was generated using *TurboScribe AI* technology. Once researchers edited the transcript for clarity and formatting, it was distributed to participants via email for member checking.

Data Analysis

The survey sample was more than half female, with 56.75% of respondents being women, and most participants were less than 20 years old (see Appendix E). In fact, most participants were aged 18 (37.16%) and 19 (18.24%), and only 8.77% of respondents were older

than 30. These data show the corequisite English courses have a high concentration of recent graduates who are not considered college ready by multiple measures of placement.

Participants (n=133) completed the first survey, and only those aged 18 or older were included in the sample and calculated in the results. Using percentages, the researchers identified the most frequently reported score for each answer to tabulate a holistic score for each of the seven categories (see Table 1). For example, if 25% of respondents selected “4 – corresponds moderately” for a question, and that was the highest percentage attributed to any option, then 4 was reported as the holistic score for the sample. Each category can receive a maximum score of 28, meaning that each of the four items associated with that category could score a maximum of “7 – corresponds exactly” on the Likert Scale (Vallerand & Bissonette, 1992). This method differs from the typical method of calculating the scores, which uses confirmatory factor analysis to produce a self-determination index (Zeng & Yao, 2023). The justification for this method was to capture the attitudes and perceptions of two distinct groups that could be disaggregated by academic program selection; rather than attempting to calculate individual levels of motivation, the study sought to identify and compare the dominant attitudes and perceptions expressed by groups of students. Additionally, this scoring method supports comparisons between distinct academic program groups because it simplifies interpretation and facilitates practical analysis. Whereas confirmatory factor analysis and self-determination indices are designed to examine variables at a more sophisticated statistical level, the holistic scoring approach provides a straightforward representation of how groups generally perceived their motivation.

Findings

Based on the established scoring method, the sample scored the highest in two facets of extrinsic motivation on the first administration of the AMS – College Version survey, scoring the maximum number of points for Extrinsic Motivation – identified and Extrinsic Motivation – introjected (see Table 1). These scores, when considered alongside the next highest score of 25 for Extrinsic Motivation – external regulation, suggested that the sample’s primary motivating factors were extrinsic (see Table 1).

Table 1

Holistic AMS Scores for the Sample - First Survey

Type of Motivation	Holistic Score
Intrinsic Motivation – to know	18
Intrinsic Motivation – toward accomplishment	20
Intrinsic motivation – to experience stimulation	14
Extrinsic motivation – identified	28
Extrinsic motivation – introjected	28
Extrinsic motivation – external regulation	25
Amotivation	4

The holistic scores for the sample show the highest intrinsic motivation is toward accomplishment, which was two percentage points higher than the intrinsic motivation (IM) score for gaining knowledge, or learning for learning’s sake. It was six percentage points higher

than the intrinsic motivation (IM) score for experiencing intellectual stimulation or experiencing satisfaction from the act of learning.

Using the mean scores from the two groups of students within the first survey sample (see Table 2), disaggregated data found that technical students displayed a higher degree of amotivation than transfer students. There was a difference of 2.19 percentage points between technical and transfer students. Conversely, transfer students scored higher than technical students for every type of positive motivation in this study, whether intrinsic or extrinsic.

Table 2

Disaggregated Data – Academic Program (First Survey) n=133

Type of Motivation	Technical (mean)	Transfer (mean)
Intrinsic Motivation – to know	18.70	20.11
Intrinsic Motivation – towards accomplishment	18.68	19.74
Intrinsic Motivation – to experience stimulation	13.60	13.74
Extrinsic Motivation – identified	21.82	23.39
Extrinsic Motivation – introjected	20.40	22.61
Extrinsic Motivation – external regulation	20.22	22.34
Amotivation	8.17	5.98

These initial findings (see Table 2) confirmed students in the sample differed in intrinsic motivation as aligned with their academic program choice. The second administration of the AMS – College Version (see Table 3) provided further clarity about the impact of writing coaching on students' intrinsic motivation.

Table 3

Disaggregated Data – Academic Program (Second Survey) n=72

Type of Motivation	Technical (mean)	Transfer (mean)
Intrinsic Motivation – to know	19.69	20.13
Intrinsic Motivation – towards accomplishment	19.68	20.88
Intrinsic Motivation – to experience stimulation	14.68	15.07
Extrinsic Motivation – identified	22.66	23.22
Extrinsic Motivation – introjected	22.51	23.83
Extrinsic Motivation – external regulation	22.87	23.91
Amotivation	7.34	6.69

To assess the degree to which writing coaching interventions impacted intrinsic motivation for transfer students, a paired-samples t-test was conducted. Overall intrinsic motivation was calculated as the mean of three intrinsic motivation subscales from the AMS – College Version. Results indicated a small, non-significant increase in intrinsic motivation from the first administration of the survey ($M = 17.91$, $SD = 4.26$) to the second administration ($M = 18.69$, $SD = 4.97$), $t(36) = 1.24$, $p = .22$, $d = 0.20$. Pearson correlation analysis revealed no significant relationship between the number of coaching sessions attended and intrinsic motivation gain scores, $r = -.13$, $p = .43$.

A paired-samples t-test was also conducted to evaluate changes in intrinsic motivation among technical students following writing coaching interventions. Results indicated a statistically significant increase in intrinsic motivation from the first survey ($M = 16.84$, $SD = 4.59$) to the second administration ($M = 18.47$, $SD = 4.77$), $t = 2.41$, $p = .02$, $d = 0.39$. Pearson correlation analysis revealed a significant positive relationship between the number of coaching sessions completed and intrinsic motivation gain scores, $r = .31$, $p = .04$, indicating that technical students who engaged in more coaching sessions experienced greater motivational gains when compared to their transfer counterparts.

A Shapiro-Wilk test of normality was conducted to assess validity of the data (see Table 4). Observations consist of paired samples from the same subjects and are independent of one another; the pairs were randomly selected from both groups of the student population. The Shapiro-Wilk = 0.813 indicates that the p values are large ($p > 0.05$). Therefore, the assumption of normality is met for the paired t-test (Shapiro & Wilk, 1965).

Table 4

Shapiro-Wilk Test of Normality Assumption Checks

		W	p
Group 1 Technical Students	Group 2 Transfer Students	0.959	0.813

Note: Significant results suggest a deviation from normality.

In the focus group interview, three of the four participants (75%) were female, and one (25%) was male; half of the participants were White, and half were non-white. All participants were older than most of the sample, with ages ranging from 19 to 36 years old. Two participants (50%) self-disclosed that they were parents, and all four voluntarily shared that their start in college was delayed; three took some time off after high school, and the oldest participant, Lalu, earned her General Education Diploma (GED) a few months before enrolling in college courses. These demographics show that, although the focus group sample was small, the participants' demographic identities were diverse. Three major themes emerged from the focus group interviews: *motivation to succeed*, *writing support from coaches/tutors*, and *barriers and challenges* (see Table 5). These themes provided insight into the participants' experiences in and attitudes toward corequisite English, embedded tutoring, and academic motivation; several subthemes within these categories further expanded on specific items that students felt directly impacted their individual experiences (see Table 6).

Table 5*Deductive Coding Framework*

Deductive Code	Description	Frequency
Motivation to Succeed	References to internal drive, goals, future success, or family influence	29
Writing Support (Coaches/Tutors)	Mentions of writing coaches, tutoring sessions, feedback or academic support	26
Barriers and Challenges	Mentions of balancing responsibilities, anxiety, time, or self-doubt	21
Persistence and Resilience	References to continuing despite obstacles or “failure not being an option”	18
Preparedness for College	Student perceptions of readiness, expectations, or confidence entering college	17
Sense of Belonging	Mentions of feeling accepted, supported, or comfortable in class or college	14

Table 6*Inductive Coding Framework*

Inductive Code	Description	Frequency
Overcoming Anxiety	Emotional barriers around writing, public speaking, or college participation	10
Individualized Support	One-on-one coaching or tutoring is seen as most beneficial and motivating	9
First-Generation Pride	Students expressed determination to succeed as first-generation college students	8
Growth and Transformation	Self-awareness of personal growth and confidence since starting college	7
Finding Their Voice	Students connect writing and classroom discussion with developing confidence and self-expression	7
Serving as a Role Model	Desire to inspire children or siblings through educational success	6
Balancing Roles	Managing school, work, and parenting responsibilities	6
Supportive Faculty Relationships	Professors' care and encouragement as key motivators	5
Accessibility of Campus Resources	Appreciation for tutoring, counseling, or other accessible support	5

Discussion

Vallerand and Bissonette (1992) state “extrinsic motivation pertains to a wide variety of behaviors where the goals of action extend beyond those inherent in the activity itself [...] as a means to an end and not for their own sakes” (p. 600). The psychological underpinning of extrinsic motivation is that the source for motivation is outside the self; in the academic context, external motivation may be continuing one’s education in pursuit of skills training for a specific career path. Conversely, intrinsic motivation is rooted in a sense of competence and autonomous behavior (Wells, 2025). However, no one type of motivation can be identified for any individual or group; students attend community colleges “for myriad reasons including updating skills, job training, personal enrichment, and transfer to 4-year institutions” (Martin et al., 2014, p. 222).

Considering the cohort in this study, 56% of students who dropped the corequisite course in the week before classes started were from technical programs; during the first week of class meetings, 67% of the students reported as no-shows were also from technical programs. It is important to note that out of the initial 133 participants in the study, 61 did not complete the second administration of the AMS – College Version; in fact, 22 of those students ultimately withdrew from the course. This data substantiates Martin et al.’s (2014) argument that the characteristics of students when entering college can have a significant bearing on their persistence. This study reinforces that those characteristics vary widely between community college students who choose technical programs and students who pursue transfer for a baccalaureate degree.

Initial enrollment data for the 10 sections in the sample showed a nearly even split between technical programs (49.8%) and transfer degrees (50.2%), but data from students’ self-reported academic programs on the AMS – College Version survey was much more disparate, showing an overwhelming majority of students reported they were enrolled in technical programs (78.3%) rather than seeking a transfer degree (21.6%). While a handful of students changed their selected academic program between initial enrollment and the administration of the AMS – College Version survey, this change of heart does not fully explain the discrepancy in data. Nearly a third of our participants reported they were enrolled in selective admissions Allied Health programs, including Nursing (16.89%), Radiography (6.08%), Surgical Technology (3.38%), and Respiratory Care (1.35%) (see Appendix F). However, at this stage of their educational journey, students were not yet eligible to be admitted to these programs. Furthermore, few students at this institution who begin in developmental or corequisite coursework are accepted into selective admissions programs, particularly Nursing. While these students were attending college with the *intention* of becoming eligible to apply to selective admissions Allied Health programs, they were not yet accepted to those programs. For record-keeping and financial aid purposes, these students are classified as AS students because the AS degree pathway can help them accrue credits that will count towards eligibility for admission to selective admissions Allied Health programs as well as completion of that credential, should they be admitted. The discrepancy in enrollment data and self-reported data shows that many students do not clearly understand the selective admissions process.

Interestingly, technical students in the sample who took both surveys averaged exactly two (2.0) visits with a writing coach during the semester, compared to transfer students who averaged a slightly lower 1.94 visits. Using duplicated and unduplicated usage data from the Learning Commons, the researchers found that 32 unique technical students had a total of 39

tutoring visits, and 25 unique transfer students had a total of 41 visits. Based on this data comparing student usage, technical students were more likely to pursue tutoring, but transfer students were more likely to attend multiple sessions; this data aligns with the finding that transfer students were more motivated in every category, hence why transfer students went back for more individual coaching. It could be argued that the scores for transfer students were higher in each category because they have entering characteristics that vary from those of technical students, such as more cultural capital, specific college plans, and greater academic preparedness (Martin et al., 2014).

In the second administration of the survey (n=72), the sample showed an increase in all categories of intrinsic motivation following participation in writing coaching. Disaggregated data reveals technical students showed an increase of 1.06 percentage points in intrinsic motivation – to experience stimulation and an increase of 0.59 percentage points in intrinsic motivation – to know; their greatest gains were in the category of extrinsic motivation – introjected, with an increase of 1.08 percentage points. As hypothesized, the intervention of writing coaching increased technical students' intrinsic motivation, noted in two of three IM categories. The finding that transfer students scored higher in every category of motivation was surprising because it was hypothesized that technical students would have higher extrinsic motivation scores and transfer students would have higher intrinsic motivation scores, based on the typical reasons students pursue community college education. Although this study focused on increasing intrinsic motivation, which would imply greater academic progress, the amotivation score for the entire sample also increased, suggesting that feelings of discouragement were higher at the end of the course. Students may have been fatigued when the AMS – College Version was administered for the second time during final exam week, or they may have been worried about their grades.

Focus group participants were enrolled in paired sections of ENG 101 and IRW 100 taught by a variety of instructors. Though a small number of participants (n=4) engaged in the focus group interview, their diverse backgrounds and preparation levels (see Table 5) offered unique lenses into their experiences in corequisite English and with embedded tutoring. While the focus group had few participants, the students who completed the interview were representative of the student population at the institution: predominantly female with a significant percentage of non-white students and student parents who receive financial aid, almost evenly split between transfer and technical programs. The students shared similar sentiments about starting college and the factors that motivated them. Lalu, Ashley, and Angela all displayed intense intrinsic motivation when it came to their academic success, echoing Vallerand et al.'s (1992) finding that women are more intrinsically motivated. Jake, the only male in the group, did not talk much about his personal success or self-fulfillment; instead, he was more focused on his career path in Heating, Ventilation, and Air Conditioning (HVAC).

Lalu, a single mother and the oldest participant at age 36, described a lifetime of struggle, growing up in foster care and group homes without having stability or encouragement. Her issues were so severe that she could not attend regular high school, and she moved around frequently. As an adult, Lalu said she cared more about having fun until she became a mother to a child with special needs. Confronting her own attention deficit hyperactivity disorder (ADHD) diagnosis alongside her son's autism, Lalu focused on survival for the two of them. She realized that she could not earn a sustainable living wage without a high school diploma, so Lalu focused on completing her GED. Feeling motivated, she immediately enrolled in college classes so she

would not lose momentum. Lalu stated, "...just the fact of knowing that I'm doing this [going to college] motivates me more than anything [...] I'm in it to win it" (Lalu, personal communication, October 14, 2025).

Ashley is a 26-year-old mother of two children who experiences extreme social anxiety and dislikes situations where she is forced to interact with people. Ashley's daughter is autistic, and she fears that the need for her child's specialized care, coupled with home and work responsibilities, might eventually overwhelm Ashley so much that she would not remain in classes. On the contrary, Ashley described finding joy in waking up and coming to school, earning good grades, and proving to herself that she was achieving her goals despite these obstacles. Ashley stated many times how important it was to her to be a role model for her children. The motivation to succeed increased for Ashley when she worked with a writing coach on her essays outside of class: "They put you in focus almost. It's like you're locked in, because once you see them, you're just ready to go for the next one [...] you're more involved. You're more in it, if that makes sense" (Ashley, personal communication, October 14, 2025).

For Angela, a 22-year-old pursuing Small Business Management, visualizing the future is one way she stays motivated, hoping that her younger siblings learn from her example. Stating that she did not do well in her junior year in high school, Angela got more serious about going to college as a senior, enlisting the help of a guidance counselor to help her set goals. Yet in the first week of college classes, Angela questioned herself and wondered if she had made a mistake, especially because she felt she was not a strong writer. Angela stated she enjoyed getting back good grades after booking appointments and working with a writing coach: "I used to be really bad at writing [...] but now that I [have gone] more, I've seen a lot more progress in my writing skills now" (Angela, personal communication, October 14, 2025).

Jake, the youngest participant, is a 19-year-old who took some time off after high school to enter the workforce, soon realizing he would need more education to earn a secure living for himself. He talked about fighting through English and other required general education courses before he could enroll in programmatic courses for HVAC, which is his declared academic program. For Jake, college is the conduit to future opportunities, so taking classes which allow him to move forward into his program is just a part of that process. Jake stated, "I know I gotta [*sic*] pass [English] with a good grade to be able to move on" (Jake, personal communication, October 14, 2025).

The similarities between the students in the focus group emerged as they talked about their experiences with both academic and non-academic barriers. Like findings in the research literature, the focus group participants demonstrated "remarkable resilience, indicating that adult learners find ways to navigate and overcome the challenges inherent in their roles" (Wells, 2025). Each of them expressed overwhelming anxiety about starting college and deep concern they did not belong or would not be successful. Additionally, each of the participants self-identified as first-generation college students, with neither parent having a bachelor's degree; they all were adamant that they did not have support systems at home, and nobody encouraged them to attend college or do well. In fact, Lalu remarked that her family members were shocked she had not yet dropped out of college. These findings showcase the participants' intrinsic motivation, especially because family support has been shown to have substantial and profound impacts on students' persistence (Wells, 2025).

Holistically, the sample appeared to be more extrinsically motivated; in contrast, the focus group participants each displayed strong intrinsic motivation. Martin (2014) found that community college students' innate motivation, especially in overcoming adverse circumstances, was a key factor that contributed to degree completion. Like Jake and Angela, students in that study were also "motivated by the opportunities that education affords them in the future" (Martin, 2014, p. 231). Although certain examples of extrinsic motivation—like making family members proud and increasing earning potential—were discussed, the resounding theme in the focus group conversation was the sense of personal pride and accomplishment students drew from being successful in college, factors demonstrative of intrinsic motivation.

The survey sample earned higher scores for three subcategories of extrinsic motivation, with the highest scores in EM-identified and EM-introjected, both ways motivation is regulated within an individual. A student who exhibits introjected regulation has begun to "internalize the reason for his or her actions" (Vallerand et al., 1992, p. 1006) and can advance to expressing it as part of their identity as a form of personal choice. For example, Lalu is extrinsically motivated by her autistic son:

You can do anything you put your mind to. If you really want to do it, you can do it. I just want him to understand it doesn't matter what you've been diagnosed with. It doesn't matter if one person tells you 'no,' keep going because somebody else can tell you 'yes.' (Lalu, personal communication, October 14, 2025).

Like Lalu, Ashley views motherhood as a prime motivating factor towards academic success. She said she starts every morning with a pep talk, telling herself that failing is not an option: "Success is the only way that I'm going to be able to live and have my kids live the way I want them to" (Ashley, personal communication, October 14, 2025). Though not a parent yet, Angela has a younger brother watching her journey. She said, "[I want] to provide an example to my younger sibling to show him, to motivate him also to go to college" (Angela, personal communication, October 14, 2025). For these students, the motivations of being a role model for their families and showcasing education as the pathway to a better future weigh heavily on their day-to-day experiences in corequisite English.

While other themes were evident in the deductive coding framework, the top three themes of *motivation to succeed*, *writing support from coaches/tutors*, and *barriers and challenges* (see Table 6) have a unique interconnectedness based on the purpose of the study. The study sought to identify types of motivation among different groups of students and the degree to which embedded tutoring interventions impacted those motivations and found that overcoming *barriers and challenges* equally fueled students' *motivation to succeed* academically and inspired them to seek *writing support from coaches/tutors* outside of class, which bolstered their confidence and academic performance.

Inductive coding of the focus group data revealed a deeper understanding of students' perceived barriers and supports (see Table 6). Participants in the focus group were particularly vocal about their experiences with anxiety and overcoming it, both inside and outside the classroom. This topic was the most frequent theme that arose organically in the students' discussion of their challenges and worries, appearing 10 times during the interview. Anxiety was brought up several times by the focus group participants as a barrier to their confidence in pursuing higher education and meeting the expectations of college-level assignments.

Almost as significant were the group's appreciation of individualized support through writing coaching, which appeared nine times, and the pride they expressed as first-generation students determined to succeed in their college journey, appearing eight times. All four participants mentioned the value of individualized learning support through one-on-one sessions with a writing coach. Ashley stated, "I feel like booking an appointment, whether it's virtually or [in person], it's better, because you get every ounce of knowledge that you possibly can in a certain time frame. That's what helped me more" (personal communication, October 14, 2025). First-generation pride was also mentioned as a motivator for the students to prove to themselves, their children or siblings, and others that they could achieve their education and career goals successfully. Thematically, the inductive codes exposed students' desires to do well for themselves and serve as role models for others, while acknowledging multiple stressful demands for their time and attention.

Implications and Recommendations

The implications of this study confirm what many corequisite English teachers in the community college have reported anecdotally and believe to be true across their sections: technical students are more at-risk for withdrawal and course failure because they are less likely to come to college with the same levels of intrinsic motivation as their transfer-minded peers. At the heart of this retention risk and deficit of intrinsic motivation is the lack of clear connections between critical reading, standard college-level composition curricula, and the students' intended career paths. Intentionally connecting how writing relates to careers is paramount for helping students in technical programs develop confidence and persistence, and embedded writing tutoring is a critical part of this connection of concepts. The study findings suggest that writing coaching has a greater impact on the intrinsic motivation of technical program students in corequisite English, which strongly supports the extension of contextualized academic support and instruction to developmental programs.

Writing coaching sessions present an opportunity to strengthen students' feelings of institutional belonging and to reinforce their budding writing skills through iterative, spaced practice in a familiar environment where vulnerability can be exchanged for agency. Using principles from Mackiewicz & Thompson's (2013) politeness framework to encourage student autonomy and choice can help students feel more authentic as writers and develop intrinsic motivation to experience personal growth. Repeated coaching sessions may capitalize on that momentum by incorporating metacognitive activities such as mindfulness and reflection, increasing student confidence through spaced practice. While these concepts are certainly not new in the composition classroom, consistent application and alignment in instruction and writing tutoring/coaching can help students develop growth mindset and internalize writing as a skill that can be developed over time (Mackiewicz & Thompson, 2013; Miller, 2020). Furthermore, an increase in confidence may contribute to an increase in the student's ability to experience intellectual stimulation.

Much of the literature surrounding corequisite instruction focuses on who the students are and addressing their needs and barriers (Eaton et al., 2023; Hyman, 2025; Jones-Foster, 2022; Waters-Bailey, et al., 2019; White et al., 2020), but who is leading the classroom is equally worth studying. Selectively staffing corequisite classrooms with faculty who exhibit compassionate pedagogy and who exemplify the mission of the community college is essential (Denial, 2024; Hyman, 2025). Further, amplifying first-generation voices in the classroom can

have a positive impact on students' intrinsic motivation. Therefore, prioritizing first-generation faculty as instructors in the corequisite classroom can strengthen rapport and trust through shared experience.

The literature surrounding this topic, coupled with the researchers' findings, supports embedded tutoring as one intervention that makes a significant difference in corequisite education; not only does the number of exposures increase the likelihood of passing the gateway course, it also corresponds with higher final grades (Miller, 2020; Vick et al., 2015). Requiring tutoring as part of the revision process for drafts and truly embedding the experience of writing coaching into the flow of classroom activity can solidify the message that students who exhibit help-seeking behaviors are taking actions associated with academic success. Technical students need to hear this narrative to reverse their assumption that only weak or struggling students use campus resources.

A strong marriage between English departments and their library and academic support counterparts cannot be overemphasized. Faculty and academic support staff share a central mission to develop students' abilities to think critically, engage ethically with information, and communicate effectively. English courses rely heavily on reading, research, and writing, all skills directly supported by library expertise in information literacy and research. Academic support staff provide supplemental instruction and resources to enhance classroom learning. Communication between instructors and academic support staff is key, ensuring everyone is consistent regarding expectations, roles, and responsibilities.

When English faculty collaborate with librarians, students receive consistent reinforcement on how to integrate textual support into their original compositions and explore a variety of resources to expand their knowledge of a particular topic. Strong, deliberate partnerships between English departments and college libraries certainly have a positive impact on student success (Insua et al., 2018). Librarians, tutors, and coaches are academic partners with faculty to ensure student success: "Faculty members who utilize embedded tutoring strategies have the opportunity to help students improve their grades and to improve course retention rates" (Channing & Okada, 2020, p. 245). Libraries, which may be combined with tutoring centers in community colleges and other small institutions, provide accessible, just-in-time support outside the classroom which complements instruction. This intervention can be critical for first-generation and underprepared students, who benefit from customized services and support to strengthen their foundational skills and habits for learning.

More importantly, the significance of these findings extends beyond a single course or institution. Community colleges continue to serve large populations of academically underprepared, first-generation, and career-focused students, many of whom are required to enroll in corequisite coursework (Community College Research Center, 2021). Understanding how students' motivation changes throughout the semester provides faculty and administrators with insight into when students may be most vulnerable to disengagement or withdrawal. Motivation is closely connected to attendance, academic confidence, persistence, and overall student success; therefore, if institutions can better identify factors that positively or negatively influence students' motivation, they may be able to implement targeted supports earlier in the semester before they withdraw or fail.

The findings of this study highlight the importance of examining the experiences of technical and workforce-oriented students, a population that is often underrepresented in

developmental education research. Much of the existing literature focuses on traditional, transfer-oriented students, yet technical students may experience different motivational pressures related to employment, family obligations, financial stress, or accelerated program timelines. By focusing specifically on technical students in corequisite English, this study helps fill a gap in the literature and provides a foundation for future research that is more responsive to the realities of community college populations.

Limitations

This study has several obvious limitations: there was a small number of participants in the focus group from the survey sample, and those participants only represented one of the two campuses where corequisite English is offered at the research site. This means the results of the sample may not be representative of the population. An additional limitation may be that the students self-reported academic program plans that were different from their initial enrollment declarations; in most cases, this was reflective of students who were officially noted as AS students because they hoped to be admitted to selective admissions programs in Allied Health or Nursing.

Lastly, the number of participants decreased by 54% from the first administration of the AMS – College Version ($n=133$) to the second administration of the survey ($n=72$). This decrease is reflective of student withdrawals from the course and may indicate survey fatigue or disinterest among the population. Because participant attrition reduced the sample size, the reduction may have decreased statistical power and certainly limited generalizability of the findings. Consequently, internal validity is threatened if participants who withdrew from the course differed systematically from those who were retained, raising the question of whether the remaining sample ($n=72$) still adequately represented the population. For example, lower-performing participants or those who had negative experiences in the course may have dropped out; additionally, certain demographic groups may have been lost disproportionately, which also could threaten validity.

Despite these limitations, the study still provides meaningful and applicable insights. Although the reduction in participants may limit the generalizability of the findings, the findings remain transferable, as the sample offers valuable information regarding trends, relationships, and student experiences within the context of technical students enrolled in corequisite English at a community college. Importantly, the study contributes to the existing body of research by examining motivation over time rather than relying on a single snapshot of the participants' perceptions. Even with attrition, the data collected from participants who completed both administrations of the AMS – College Version can help educators identify patterns of motivational change and provide preliminary evidence regarding factors that may influence student engagement, persistence, and/or retention. The findings can inform instructional practices, student support initiatives, and future interventions designed to improve student motivation and success in corequisite English.

Conclusion

This study is significant because it addresses the critical connections between student support services, academic motivation, and persistence in college. By examining whether embedded tutoring improves motivation, the research directly evaluates an intervention that

could help students succeed in challenging and multifaceted courses like corequisite English. The comparison between technical program students and transfer students adds further value; technical students often view general education courses as barriers to completing their credentials, while transfer students may approach them differently, valuing them for the learning experience. Understanding that motivation varies across these groups provides important insight into how student backgrounds and goals shape academic engagement.

Additionally, by exploring the relationship between motivation and persistence, the study links psychological factors to measurable student outcomes. Further research could explore if higher motivation is associated with lower withdrawal rates; then, colleges can justify investing in targeted strategies like embedded tutoring that not only improve academic performance, but also keep students enrolled through completion of their programs. This study yielded evidence-based recommendations for improving success in corequisite English, reducing attrition, and helping more students, especially those in technical fields, persist to graduation.

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Appendix A – AMS – College Version

ACADEMIC MOTIVATION SCALE (AMS-C 28)

COLLEGE VERSION

Robert J. Vallerand, Luc G. Pelletier, Marc R. Blais, Nathalie M. Brière,
Caroline B. Senécal, Évelyne F. Vallières, 1992-1993

Educational and Psychological Measurement, vols. 52 and 53

WHY DO YOU GO TO COLLEGE ?

Using the scale below, indicate to what extent each of the following items presently corresponds to one of the reasons why you go to college.

Does not correspond at all		Corresponds a little		Corresponds moderately		Corresponds a lot		Corresponds exactly	
1	2	3	4	5	6	7			
WHY DO YOU GO TO COLLEGE ?									
1.	Because with only a high-school degree I would not find a high-paying job later on.				1	2	3	4	5
6	7								
2.	Because I experience pleasure and satisfaction while learning new things.				1	2	3	4	5
6	7								
3.	Because I think that a college education will help me better prepare for the career I have chosen.				1	2	3	4	5
6	7								
4.	For the intense feelings I experience when I am communicating my own ideas to others.				1	2	3	4	5
6	7								
5.	Honestly, I don't know; I really feel that I am wasting my time in school.				1	2	3	4	5
6	7								
6.	For the pleasure I experience while surpassing myself in my studies.				1	2	3	4	5
6	7								
7.	To prove to myself that I am capable of completing my college degree.				1	2	3	4	5
6	7								
8.	In order to obtain a more prestigious job later on.				1	2	3	4	5
6	7								

9.	For the pleasure I experience when I discover new things never seen before.	1	2	3	4	5
6	7					
10.	Because eventually it will enable me to enter the job market in a field that I like.	1	2	3	4	5
6	7					
11.	For the pleasure that I experience when I read interesting authors.	1	2	3	4	5
6	7					
12.	I once had good reasons for going to college; however, now I wonder whether I should continue.	1	2	3	4	5
6	7					
13.	For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments.	1	2	3	4	5
6	7					
14.	Because of the fact that when I succeed in college I feel important.	1	2	3	4	5
6	7					
15.	Because I want to have "the good life" later on.	1	2	3	4	5
6	7					
16.	For the pleasure that I experience in broadening my knowledge about subjects which appeal to me.	1	2	3	4	5
6	7					
17.	Because this will help me make a better choice regarding my career orientation.	1	2	3	4	5
6	7					
18.	For the pleasure that I experience when I feel completely absorbed by what certain authors have written.	1	2	3	4	5
6	7					
19.	I can't see why I go to college and frankly, I couldn't care less.	1	2	3	4	5
6	7					
20.	For the satisfaction I feel when I am in the process of accomplishing difficult academic activities.	1	2	3	4	5
6	7					
21.	To show myself that I am an intelligent person.	1	2	3	4	5
6	7					
22.	In order to have a better salary later on.	1	2	3	4	5
6	7					
23.	Because my studies allow me to continue to learn about many things that interest me.	1	2	3	4	5
6	7					
24.	Because I believe that a few additional years of education will improve my competence as a worker.	1	2	3	4	5
6	7					

25.	For the "high" feeling that I experience while reading about various interesting subjects.	1	2	3	4	5
6	7					
26.	I don't know; I can't understand what I am doing in school.	1	2	3	4	5
6	7					
27.	Because college allows me to experience a personal satisfaction in my quest for excellence in my studies.	1	2	3	4	5
6	7					
28.	Because I want to show myself that I can succeed in my studies.	1	2	3	4	5
6	7					

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Appendix B – Focus Group Interview Questions

1. Is ENG 101 an important class? What skills are you learning and how will they help you in the future, either in college or in the workplace?
2. Did working with a writing coach in class workshops motivate you to perform your best in this course? Why or why not?
3. Did working with a writing coach outside of class in the Learning Commons motivate you to perform your best in this course? Why or why not?
4. What motivates you to do well in ENG 101? In other words, what factors inspire you to be successful in this course?
5. How prepared did you feel for this course? What would have made you feel more prepared?
6. Did anything come up this semester that made you consider dropping out of this class? Why didn't you?
7. Is there anything we haven't talked about today that you would like to add?

Appendix C – IRB Exemption



May 27, 2025

Stephanie Hyman
stephanie.hyman@kctcs.edu
Southcentral KY Community and Technical College
1849 Loop Dr.,
Bowling Green, KY 42101

RE: The Impact of Embedded Tutoring on Academic Motivation and Retention of Community College Students in Technical Programs Enrolled in Corequisite English

Dear Ms. Hyman,

The Kentucky Community and Technical College System (KCTCS) Human Research Protection Program (HRPP) has carefully reviewed your submission. The HRPP has determined that your protocol meets the criteria established in [45 CFR 46.104\(d\)\(2\)\(i\)](#). As a result, your proposed research is exempt from the provisions of the Common Rule and is free to move forward.

If you wish to change the research protocol during your investigation in any way that would exceed the rationale for this exemption, you must first submit a modification request to the KCTCS HRPP. Research beyond this exemption may not commence unless and until approved by the HRPP.

Thank you for your cooperation with KCTCS in protecting human subjects. If we can be of any further assistance, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Anthony Pinson", is written over a light blue horizontal line.

Anthony Pinson
KCTCS Human Subjects Administrator

cc: KCTCS Executive Vice President and Provost
KCTCS Office of Research and Policy Analysis
KCTCS Human Subjects Legal Advisor



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The Kentucky Community and Technical College System is an equal educational and employment opportunity institution.

Appendix D – Site-Based Access Approval



May 27, 2025

Ms. Stephanie Hyman
stephanie.hyman@kctcs.edu
Southcentral KY Community and Technical College
1849 Loop Drive
Bowling Green, KY 42101

RE: The Impact of Embedded Tutoring on Academic Motivation and Retention of Community College Students in Technical Programs Enrolled in Corequisite English

Dear Ms. Hyman,

Upon review of the research protocol, I hereby grant permission for this research project to be conducted at Southcentral Kentucky Community and Technical College.

Please note that while this letter serves as approval of site access for this study, the research project may require formal review and approval from your institution's Institutional Review Board (IRB) before it may begin. If so, documentation of approval must be submitted to the Human Research Protection Program (HRPP) through the KCTCS System Office for acceptance.

If you have any questions regarding the KCTCS HRPP, please reach out to hrpp@kctcs.edu.

Sincerely,

A handwritten signature in blue ink, appearing to read "Brooke Justice".

Dr. Brooke Justice
Interim President

cc: KCTCS Human Subjects Administrator



Dr. Brooke Justice
Interim President
1845 Loop Drive • Bowling Green, KY 42101
P: (270) 901-1111
southcentral.kctcs.edu

Southcentral Kentucky Community and Technical College is an equal educational and employment opportunity institution.

Appendix E – Survey Participants' Demographic Data

Gender	Male – 43.24%
	Female – 56.75%
	Prefer Not to Say – 0.00%
Age	17 ² - 1.35%
	18 – 37.16%
	19- 18.24%
	20- 6.75%
	21- 4.05%
	22- 2.70%
	23- 5.40%
	24- 2.70%
	25- 2.70%
	26- 4.72%
	27- 0.67%
	28- 2.02%
	29- 0.67%
	30- 1.35%
	31- 2.70%
	32- 0.00%
	33- 0.00%
	34- 0.00%
	35- 2.70%
	36- 1.35%
	37- 0.00%
	38- 0.67%
	39- 0.00%
	40- 1.35%

² Only students aged 18 and older were eligible to take the survey. Students were verbally instructed to participate only if they were 18 or older; however, two minors, both aged 17, took the survey and signed the informed consent form to attest they were eligible. Because of their ineligibility, their results have been removed from the study and are not included in the sample.

Appendix F – Survey Participants' Self-Reported Academic Program Enrollment

Academic Program Selection	Air Conditioning Technology – 4.05%
	Associate in Arts – 9.46%
	Associate in Science – 12.16%
	Automotive Technology – 5.41%
	Business Administration – 11.49%
	Collision Repair Technology – 0.00%
	Computer and Information Technology- 6.08%
	Computerized Manufacturing and Machining Technology- 0.00%
	Culinary Arts – 5.41%
	Electrical Technology – 6.08%
	Engineering and Electronics Technology – 1.35%
	Fire/Rescue Science Technology – 0.68%
	Industrial Maintenance Technology – 1.35%
	Medical Information Technology – 2.03%
	Medical Laboratory Technician – 2.03%
	Nursing – 16.89%
	Radiography – 6.08%
	Respiratory Care – 1.35%
	Surgical Technology – 3.38%
	Welding – 4.73%

Appendix G – Focus Group Participants' Demographics

Participant	Gender	Age	Ethnicity	Official Major	Self-Stated Major
Ashley	Female	26	White	Associate in Science	Nursing
Jake	Male	19	White	Engineering Technology – Air Conditioning	Engineering Technology – Air Conditioning
Angela	Female	22	Hispanic	Small Business Management	Small Business Management
Lalu	Female	36	Black/African American	Associate in Science	Nursing



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