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# Relationship Between Sense of Belonging and Academic Achievement: Effect of Involvement in a Sports Team

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Relationship Between Sense of Belonging and Academic Achievement: Effect of  
Involvement in a Sports Team

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### Abstract

This study investigated whether a correlation existed between involvement in a university sports team and students' sense of belonging and academic achievement. A total of 35 participants were investigated. The study group was comprised of 12 female undergraduate students completing a first year introductory course who were members of the Western All-Girl cheerleading team and the comparison group included 23 female undergraduate students enrolled in Psychology 1000 at Brescia University College who were not members of a university sports team. Participants completed a total of four questionnaires which measured the following variables: sense of belonging, academic precursors and academic achievement. The results of a Pearson correlation indicated that there was a non-significant relationship between students' academic achievement and the following variables: sense of belonging-psychological experiences, sense of belonging-antecedents, academic procrastination and involvement in a sports team.

## Relationship Between Sense of Belonging and Academic Achievement: Effect of Involvement in a Sports Team

Sense of belonging has been identified by Maslow as one of five basic human needs (Maslow, 1943), such as the need for food and water. According to Hagerty, Lynch-Sauer, Patusky, Bouwsema and Collier (1992), a sense of belonging can be defined as “the experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment”; in other words, to belong is to be accepted as a part or a member of a group or society (Hall, 2014). Having a sense of belonging to the greater community is associated with improved health, motivation and overall happiness (Hall, 2014). There has been a considerable amount of research examining the associated academic benefits that stem from a strong sense of belonging (Freeman, Anderman & Jensen 2007; Hagerty & Patusky, 1994; O’Keeffe, 2013). These benefits include increased student retention for the general, and specific, population of students, increased academic motivation, and increased academic success in particular programs (Grobeck, 2016; Hausmann, Schofield & Woods, 2007; Stout & Wright, 2016; Vaccaro, Daly-Cano & Newman, 2015).

Past research has indicated that a sense of belonging is positively correlated with increased student retention on college campuses (O’Keeffe, 2013). O’Keeffe (2013) suggested that the first year of higher education may be a time of instability in the lives of students. For instance, students are adjusting to relocation and separation from family and friends and are adjusting to a new academic life. There are new expectations associated with this first year of higher education that a student must adjust to, while

simultaneously attempting to acquire new friends and resources (O’Keeffee, 2013). As identified by Bronfenbrenner, this ecological transition can often go astray (Freeman et al., 2007), resulting in eventual student attrition. The instability students face during their first year of university often results in an inability to adjust to their new surroundings and expectations, and therefore may produce a failure to persist with their academic studies (O’Keeffee, 2013). According to O’Keeffee’s (2013) research, developing a sense of belonging is the solution to stabilizing this time of uncertainty; this, in turn, increases student retention in higher education institutions (O’Keeffee, 2013).

The correlation between a high sense of belonging and increased student retention has been replicated while examining specific populations within a higher-educational setting (Hausmann et al., 2007). Hausmann, Schofield and Woods (2007) investigated intentions to persist in two specific populations of students: White and African American first-year students (Hausmann et al., 2007). Results from this study suggested that for both White and African American students, having a higher sense of belonging was associated with above average academic integration, and, in turn, having a lower sense of belonging was associated with below average academic integration (Hausmann et al., 2007). Consequently, having higher academic and social integration was associated with increased institutional commitment and increasing actual re-enrollment (Hausmann et al., 2007). More recently, Vaccaro, Daly-Cano and Newman (2015) studied the association between sense of belonging and academic success and persistence in students with a disability. Results from Vaccaro et. al.’s (2015) study indicate that, for student with disabilities the following variables are linked to the development of a sense of belonging and consequently, academic success: self-

advocacy, social relationships and the mastery of the student role. Given the fact that students with a disability have historically been a marginalized group, a higher sense of belonging results in students feeling a sense of support within their educational setting; this sense of support that results from students' sense of belonging increases their academic success (Vaccaro et al., 2015). Lastly, similar results were found when studying lesbian, gay, bisexual, transgender and queer students (LGBTQ) (Stout & Wright, 2016). Stout and Wright (2016), found that the LGBTQ population of students were more likely to persist and continue with their program if they reported a high sense of belonging.

A high sense of belonging positively influences a student's motivation to excel academically (Freeman et al., 2007). Freeman, Anderman and Jensen's (2007) research indicated that there is a positive correlation between students' sense of class belonging and their intrinsic motivation and task value; specifically, when students feel a high sense of class level belonging, they experience an increased level of motivation to excel within that course. The relationship to higher academic motivation is associated with higher academic achievement as a result of a sense of belonging (Freeman et al., 2007).

The relationship between the development of a sense of belonging and academic achievement in higher educational settings has also been examined in the context of specific academic programs (Grobecker, 2016; Stout & Wright, 2016). First, one specific program that has been studied is baccalaureate nursing students in a clinical placement (Grobecker, 2016). Results from this research indicated that sense of belonging has a positive influence on nurses learning, motivation and confidence and a negative

relationship with perceived stress (Grobecker, 2016). Second, LGBTQ students studying computing have been examined to determine the relationship between sense of belonging and academic achievement in this program. It was indicated that students with a low sense of belonging thought about leaving the computing program more often than students with a high sense of belonging (Stout & Wright, 2016). From these results, Stout and Wright (2016) concluded that a sense of belonging is vital to capitalizing on individuals' talent and perspective when in a computing program.

In addition to sense of belonging, a second variable that has often been studied in relation to academic success is academic precursors (Blumner & Richards, 1997; Klassan, Krawchuk & Rajani, 2007; Krause & Freund, 2014; Nonis & Hudson, 2010). A precursor is any variable that describes a component that preceded, and often influences, another variable. Therefore, in reference to academics, a precursor is a variable that leads to or influences an individual's academic results. The term 'academic precursors' will be used to describe variables including: procrastination, study time, study quality (for example, ability to concentrate) and self-efficacy to regulate. Past research has indicated that these academic precursors are linked to individuals' level of academic achievement (Blumner & Richards, 1997; Klassan et al., 2007; Krause & Freund, 2014; Nonis & Hudson, 2010). Precursors can be either positive or negative; for example, the ability to concentrate would be a positive precursor while procrastination would be a negative precursor.

A prominent academic precursor that is of interest when studying academic achievement is procrastination. Academic procrastination is to be slow at starting or performing an academic task, such as an assignment or studying for an exam.

Academic procrastination has been studied by Klassen, Krawchuk and Rajani (2007) in relation to self-efficacy, self-esteem and self-efficacy for self-regulation. Results from this analysis indicated that self-efficacy for self-regulation is an important variable for understanding an individual's likelihood to procrastinate (Klassen et al., 2007). In addition, Klassen et al.'s (2007) study results indicated that task-specific procrastination and a low self-efficacy to regulate negatively affected undergraduate students' actual grades and GPA (Klassen et al., 2007). More recently, Krause and Freund (2014) examined the relationship between procrastination and affective well-being; results indicated that trait and state procrastination levels are positively correlated with each other and both negatively predict affective well-being (Krause & Freund, 2014).

Study time and study habits are another example of academic precursors that are associated with students' academic achievement (Blumner & Richards, 1997; Nonis & Hudson, 2010). Study time references the amount of time students allocate to studying, whereas study habits refers to how students study- this includes level of concentration and access to good notes (Nonis & Hudson, 2010). Blumner and Richards (1997) examined the relationship between study habits, aptitude tests and grades in a group of first-year undergraduate students in Engineering. On average, students who earned higher grades scored higher on study habit scales, indicating that there is a positive relationship between study habits and academic achievement (Blumner & Richards, 1997). Later research supports these results and expands on them by indicating that study time influences academic performance, and is moderated by study habits (Nonis & Hudson, 2010). In other words, there is a positive correlation between study time and academic achievement; in addition, this correlation is stronger



when students were able to concentrate and when they had access to good notes (Nonis & Hudson, 2010).

Past research had identified that both a sense of belonging and academic precursors are important variables in understanding students' academic achievement in higher educational settings. Results from preceding research suggest a positive correlation between university students' sense of belonging and academic and personal benefits, as well as identifying academic precursors as a predictive variable of students' academic achievement. These variables have been studied in specific populations of students as well as within particular programs. However, past research has not yet examined the relationship between sense of belonging, academic precursors and academic achievement. Secondly, past research has yet to focus specifically on the student athlete population while examining these variables. According to Weese (1997), sports are a common extra-curricular activity engaged in by university students, making student athletes a population of interest for this study.

The current study examined whether there was a correlation between involvement in a university sports team (specifically a cheerleading team), sense of belonging, and academic achievement. It was hypothesized that students involved in a university sports team would indicate a higher sense of belonging than first year undergraduate students in a comparison group who are not involved in a university sports team. Secondly, it was hypothesized that increased sense of belonging would be positively correlated with academic achievement and negatively correlated with procrastination. Specifically, in terms of the measures used, it was predicted that high scores on the Sense of Belonging- Psychological Experiences (SOBI-P) and the Sense

of Belonging-Antecedents (SOBI-A) and low scores on the Academic Procrastination State Inventory (APSI) would be predictive of high scores on the Academic Performance Scale.

## **Method**

### **Participants**

This study investigated a total of 35 participants. The study group consisted of 12 participants; these individuals were female undergraduate students taking a 1000-level course who were members of the Western All-Girl Cheerleading Team. These students were recruited through letters handed out at a team practice session. The other 23 participants were first year, female undergraduate students enrolled in Psychology 1000 at Brescia University College who were not members of a Western University sports team. Those individuals created the comparison group for this study. The students were informed about the study using the SONA website, and asked to participate in a study examining the relationship between sense of belonging and the following characteristics: academic precursors (e.g. study habits) and academic achievement.

### **Materials**

All participants completed a total of 4 questionnaires for this study. The Sense of Belonging Instrument (SOBI), developed by Hagerty and Patusky (1994) as referenced by D'Arcangelo (2003), was used to measure each individual's sense of belonging. Students were given two SOBI questionnaires to complete, the SOBI-P and the SOBI-A. The SOBI-P measured the psychological experiences of an individual's sense of belonging and the SOBI-A measured the antecedents of an individual's sense of belonging (Hagerty & Patusky, 1994). The Academic Procrastination State Inventory

(APSI) was used to measure each individual's academic precursors (Binder, 2000); the APSI is a 23-item scale used to measure fluctuations in academic procrastination (Binder, 2000). The final measure that was used in this study was the Academic Performance Questionnaire (APQ), developed for the purpose of this study (see Appendix). This is a one-page questionnaire that asks individuals to indicate demographic information as well as information about their academic performance in one of their classes.

### **Procedure**

The study group was assessed first. Upon agreeing to participate in the study, individuals were asked to sign an informed consent form and were given a letter of information about the study; these were given out at the beginning of one of their practices. Individuals were then given the following four questionnaires: the SOBI-P, the SOBI-A, the ASPI and lastly, the APQ. The participants were asked to complete these questionnaires before the start of practice. Upon completing the questionnaires, individuals were given a debriefing form providing them with contact information if they had further questions about the study and access to additional resources for further reading.

After completing the assessment of the study group, the comparison group was then assessed. Upon signing up to participate in the study, individuals came to a designated room at Brescia University College and were given a letter of information. After providing written, informed consent, the participant proceeded to fill out the following 4 questionnaires: the SOBI-P, SOBI-A, the ASPI and lastly, the APQ. Upon completing the questionnaires, individuals were given a debriefing form providing them

with contact information if they had further questions about the study and access to additional resources for further reading. Individuals were compensated with one credit for completing this study.

## Results

A Pearson correlation was conducted first as a precursor to running a multiple regression. The Pearson correlation, as shown in Table 1, examined which, if any, of the following variables were correlated with academic achievement: sense of belonging-psychological experiences, sense of belonging-antecedents, academic procrastination and involvement in the Western All-Girl Cheerleading team.

There was a weak, negative and non-significant correlation between participants' academic achievement and their score on the SOBI-P. As shown in Figure 1, the psychological experiences of a participant's sense of belonging only accounted for .18% of the variation in academic achievement.

There was a weak, positive and non-significant correlation between participants' academic achievement and their score on the SOBI-A scale. As shown in Figure 2, 0.56% of participants' academic achievement was accounted for by the antecedents of their sense of belonging. This indicates that there is not a significant relationship between academic achievement and antecedents to sense of belonging.

The results of the Pearson's correlation indicated that there was a weak, negative and non-significant correlation between participants' academic achievement and their academic procrastination, as measured with the APSI. As shown in Figure 3, participants' academic procrastination accounted for 4.36% of the variation in their academic achievement.

Table 1:

## Means, SD and Correlation Coefficients

Variable	M	SD	1	2	3	4	5
1. Member	1.66	.48	-				
2. SOBI-P	30.97	8.60	.11	-			
3. SOBI-A	46.54	5.25	-.13	-.59	-		
4. APSI	63.89	14.93	-.15	.27	-.23	-	
5. APQ	79.18	7.43	-.30	-.04	.08	-.21	-

*Note.* N=35. \* indicates any significant correlations ( $p < .05$ ). SOBI-P = Sense of Belonging- Psychological Experiences, SOBI-A = Sense of Belonging-Antecedents, APSI = Academic Procrastination State Inventory and APQ = Academic Performance Questionnaire.

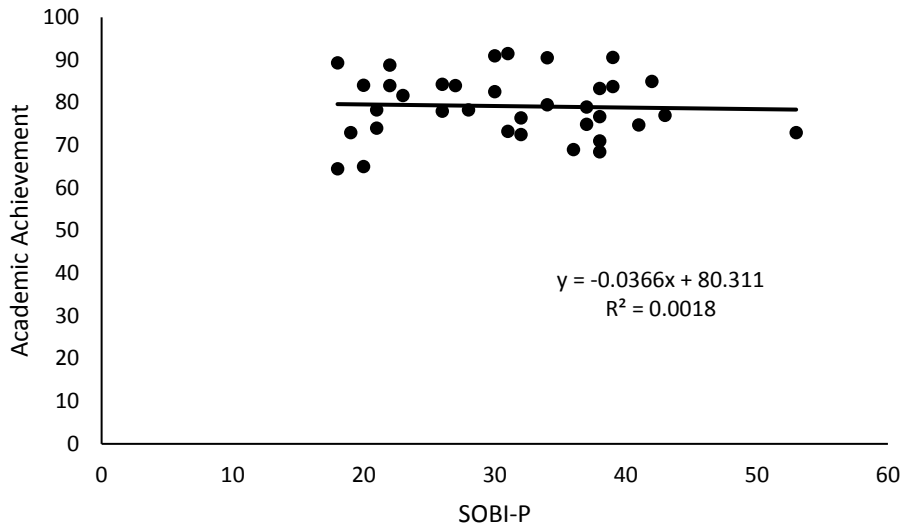


Figure 1: The correlation between participants' psychological experiences of sense of belonging (measured with the SOBI-P) and their academic achievement (measured with the APQ).

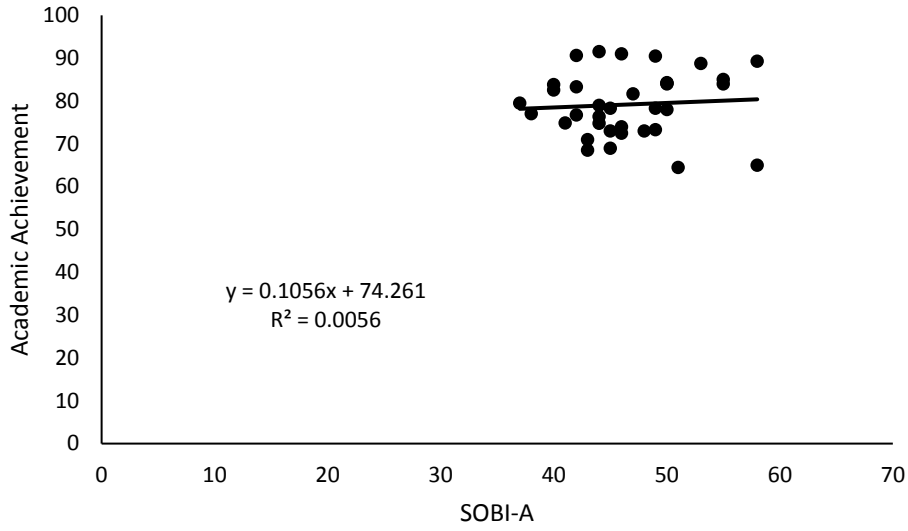


Figure 2: The correlation between antecedents of participants sense of belonging (measured with SOBI-A) and their academic achievement (measured with APQ).

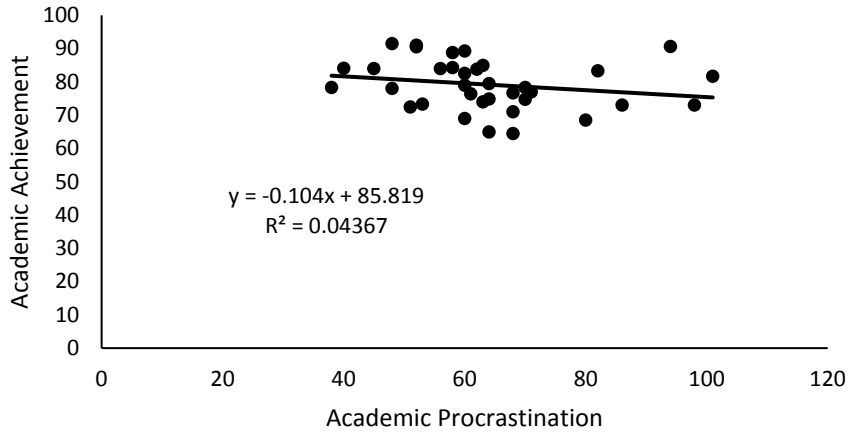


Figure 3: The correlation between academic procrastination (measured with the APSI) and academic achievement (measured with the APQ)



Lastly, the results of the correlation indicated that there was a weak, negative and non-significant relationship between students' academic achievement and their membership on the Western All-Girl Cheerleading team. Membership accounted for 9% of the variation in participants' academic achievement. Although this factor was not significant, it did account for the largest amount of variation in participants' academic achievement.

Given that the examination of the correlation showed no significant relationship between the variables, the anticipated multiple regression analysis was not conducted because it would no longer have been appropriate.

### **Discussion**

The purpose of this study was to determine whether there was a correlation between involvement in a university sports team and students' academic achievement. There were two main hypotheses in this study. First, it was hypothesized that students involved in a university sports team would indicate a higher sense of belonging than first year undergraduate students that were not involved in a university sports team. Second, it was hypothesized that an increased sense of belonging would be positively correlated with academic achievement and negatively correlated with procrastination. Neither of these hypotheses were supported by the results of this study.

The positive correlation between sense of belonging and academic achievement has frequently been noted in previous research (Freeman et al., 2007; Hagerty & Patusky, 1994; O'Keeffe, 2013). In particular, these results have been found in the LGBTQ community of students, nursing students and students with disabilities (Stout & Wright, 2016; Grobecker, 2016; Vaccaro et al., 2015). Since previous research had

indicated the existence of a significant correlation between a high sense of belonging and academic achievement, this study sought to examine whether this correlation existed within a different population of students: student athletes (Hagerty & Patusky, 1994; O’Keeffee, 2013; Stout & Wright, 2016; Grobecker, 2016; Vaccaro et al., 2015). This knowledge became the precedent for hypothesis 1: that students involved in a university sports team would indicate a higher sense of belonging than first year undergraduate students not involved in a university sports team. The results from the current research indicated that there was a non-significant correlation between the variables of academic achievement and involvement in a sports team. This contradicted the assumptions made based on previous research. There are a number of reasons for this finding. One reason is that previous research was not comparative research. Given that the present study was comparative, making assumptions based on non-comparative research may not have been appropriate. Additionally, timing may have been an issue; the data for the current research was gathered strictly from students in a first year introductory course, however, the past research, upon which the assumptions were based, did not have these strict inclusion criteria.

Previous research had indicated that a positive relationship existed between sense of belonging and academic achievement; however, this research only compared individuals within the same population (Hagerty & Patusky, 1994; O’Keeffee, 2013; Stout & Wright, 2016; Grobecker, 2016; Vaccaro et al., 2015). The current research was a comparative study of two particular populations, student athletes and the general population of students. The assumptions made for this research were based on the results of non-comparative research; this offers one potential explanation as to why the

current research findings contradict the findings of previous research conducted on the correlation between sense of belonging and academic achievement. An alternative explanation to the contradictory findings of the current research may be that first year students are not representative of the student population as a whole. As indicated by O’Keeffee (2013), the first year of higher education is a period that is characterized by uncertainty for many students. From this it can be inferred that students may not have developed a strong sense of belonging within their first year, potentially influencing the results found in the current research. In addition, residence may act as a confounding variable. A large proportion of the students in both the control and study group lived in residence; this could emulate the experience of a sense of belonging that belonging to a sports team may produce.

It is clear that past research had indicated that there are positive academic benefits associated with having a strong sense of belonging within the general population of students as well as in specific populations of students (Hagerty & Patusky, 1994; O’Keeffee, 2013; Stout & Wright, 2016; Grobecker, 2016; Vaccaro et al., 2015). Furthermore, previous research has indicated a correlation between academic precursors and academic achievement (Blumner & Richards, 1997; Klassen et al., 2007). Specifically, it has been noted that negative precursors have a negative impact on academic procrastination (Klassen et al., 2007) and positive academic precursors positively affect academic achievement (Blumner & Richards, 1997). By building upon both these assumptions, the second hypothesis was formulated: that an increased sense of belonging would be positively correlated with academic achievement and negatively correlated with procrastination. However, the results from this study again

contradicted the assumptions based on the findings from previous research. Reasons for this contradictory finding may include: identification issues and using first year students.

A limitation of the current research that may explain the lack of correlation found between academic achievement and sense of belonging was failing to ask for necessary identifying information. This study failed to ask students to identify for which course they were reporting their marks. Due to this methodological limitation, students' self-reported averages could not be controlled for based on course averages, which, in turn, could have potentially altered the results of the current research. This limitation could have altered the results of the current research because students may have been reporting on courses that had significantly different course averages. The lack of significant findings in the current research could also be explained by the age of the population. Since the majority of the participants in the current study were first year undergraduate students, it can be assumed that many of the participants may not have adopted study habits that reflect their university course load. If participants were still relying on their high school study habits to tackle their university course load, their marks may not yet be representative of their academic abilities, resulting in lower academic achievement.

Amongst the specific limitations described above, other methodological limitations were present in the current study. These methodological limitations include: identification issues, missing demographic information, small sample size and different campuses. The first, and most prominent methodological limitation of this study involved a series of identification issues. The identification issues present in this study are three-

fold. Although students were asked to indicate the class average of each assignment and examination, many students failed to do so; this constitutes the first part of the identification issue present. The second identification issue involved failing to ask students to identify which course they were reporting their grades on; as a result of this, information regarding the averages of assignments that participants failed to report on could not be determined by the researcher. The third and final identification issue ties together the two preceding issues; that is, relying on participants' self-reports could have resulted in students providing inaccurate representations of their marks.

The present study had a relatively small sample of only 35 participants. Furthermore, the study group consisted of only 12 participants. The small sample size utilized in this study creates an additional methodological limitation. Missing demographic information comprises the third methodological limitation. Participants were not asked to report on their experiences of living in residence or on being a member of a sports team; participants' experiences could influence their results, therefore this demographic information would have been important to collect. The fourth and final demographic limitation of this study is that participants were from different campuses. Specifically, the entire control group was from the Brescia University College Campus of Western University, however, participants in the study group were a collection of students from Kings College, Brescia University College and Western University Main Campus. The inconsistency regarding which Western Campus participants were from could have created discrepancies in the results of the current research.

Although previous research has demonstrated a positive correlation between a high sense of belonging and academic achievement in the general population, and

specific populations, of university students (Freeman et al., 2007; Hagerty & Patusky, 1994; O'Keeffe, 2013), the present study did not demonstrate these findings in the student athlete population. However, to determine whether the results from this study are representative of the entire university student athlete population, further research is required. Further research must control for the specific and methodological limitations evident in the current study in order to uncover more conclusive results on the correlation between sense of belonging, involvement in a university sports team and academic achievement. Specifically, further research must examine a larger sample size, an older population and should implement a longitudinal research design.

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## Appendix

## Academic Performance Questionnaire

Please indicate the following information about yourself:

1. Age:  
\_\_\_\_\_
2. Sex:  
\_\_\_\_\_ male    \_\_\_\_\_ female
3. Year of undergrad currently being completed:  
\_\_\_\_\_
4. Do you live in residence?  
\_\_\_\_\_ yes    \_\_\_\_\_ no
5. If you answered no to the previous questions, please indicate where you live:  
\_\_\_\_\_

Please answer the following based on ONE of your full year first year introductory courses. Indicate the answers using a percentage. If any of the items do not apply to your selected course, mark N/A for not applicable:

1. Your course grade:  
\_\_\_\_\_
2. Your grade on the 1<sup>st</sup> midterm: \_\_\_\_\_
3. Class average on the 1<sup>st</sup> midterm: \_\_\_\_\_
4. Your grade on the 2<sup>nd</sup> midterm: \_\_\_\_\_
5. Class average on the 2<sup>nd</sup> midterm: \_\_\_\_\_
6. Your grade on the 3<sup>rd</sup> midterm: \_\_\_\_\_
7. Class average on the 3<sup>rd</sup> midterm: \_\_\_\_\_
8. Your mark on the 1<sup>st</sup> assignment: \_\_\_\_\_
9. Class average on the 1<sup>st</sup> assignment: \_\_\_\_\_
10. Your mark on the 2<sup>nd</sup> assignment: \_\_\_\_\_
11. Class average on the 2<sup>nd</sup> assignment: \_\_\_\_\_
12. Your mark on the 3<sup>rd</sup> assignment: \_\_\_\_\_
13. Class average on the 3<sup>rd</sup> assignment: \_\_\_\_\_
14. Your participation mark in the course: \_\_\_\_\_
15. Please indicate any other work that has been evaluated and the mark you earned:  
\_\_\_\_\_