PERSONALITY MARKER IDENTIFICATION WITHIN SELECT LEARNING COMMUNITIES OF STUDENTS SEGMENTED BY MAJOR FIELD OF STUDY

An Undergraduate Research Scholars Thesis

by

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ABSTRACT

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One of the most complex issues of learning institutions today is that of understanding the learning culture. This research project shall observe and identify the diversity of personality types within learning communities at Texas A&M University and quantitatively portray the diversity of personality types by providing statistical trend information within different learning communities. Understanding the personalities that make up the population of different learning communities at Texas A&M University will help to understand the overall learning culture. This project is relevant to learning communities today because of the expanding interconnectivity between departments and majors in modern academia. Although different personalities help to create varied opinions and assist in learning, there is a growing need to understand students better to influence the learning environment so education can be meaningful for students. This study will allow for a better understanding of individuals in learning communities through determining quantitative trends in personality.

CHAPTER I

INTRODUCTION

A critical issue in education is learning about who students are and how they learn best. This project will analyze different personality trends of students in three separate majors and learning communities (Computer Science and Engineering, Technology Management, and Human Resource Development) to better understand the unique differences and similarities in the personality matrices of students. Gaining new understanding of these personality traits will afford insight as to what educational modalities will work to best assist students with learning in each of the different learning communities (Computer Science and Engineering, Technology Management, and Human Resource Development). Additionally, the data will be used to theorize implications of "cross-over" learning between these communities. One of the major points of andragogy in modern educational theory is that in order for learning to achieve at maximum potential, the material and presentation method has to be meaningful to the learner. Ausubel's (1968) cognitive learning theory begs the question, why does Texas A&M University try and teach two very different groups of people, with very different end goals for their education, in almost identical ways with overlapping course content not adjusted to the majority of students preferred learning modalities? (Ausubel) The goal of this research is to foster awareness of major personality markers in the majority of students divided into their major field of study categories to create a template from which instructors can better understand the individuals that they teach.

This research is taking place at a time of change for the Computer Science and Engineering, Technology Management, and Human Resource Development learning communities. The Bachelor of Science in Technology Management has gone through a large curriculum change moving multiple classes back to the Texas A&M campus from Blinn College. Both of the Bachelor of Science in Technology Management and Human Resource Development degrees have experienced extremely rapid growth in student population over the past decade lending credence to the need to study the population. Students from different major fields of study are comingled together in a wide variety of courses such as project management, foundations of human resource development, adult learning principals, senior capstone seminar, instructional technology and design, and principles and practices of leadership. Both learning communities have also gone under substantive curricular changes that have restructured the types of classes and course content within the degree program. Within Computer Science and Engineering, a nascent student organization developed to focus on competitive cybersecurity initiatives as a new interaction initiating contact between Technology Management and Computer Science and Engineering students. The proposed goals of this research initiative will be more effective mentoring, teaching, and learning opportunities when applied to each of these learning communities.

The tool for this research is based off of previous work through Myers-Briggs in the four linear continuum areas of personality: extraversion intuition, feeling, and perceiving. (Myers et al.) These continuums are the categories in which the study explores trends of personality. Extraversion and individuals that display extroversion traits tend to enjoy working in groups, and being around other people. Extraverts tend prefer doing thing with others rather than focusing on

individual reflection. The other side of the coin, individuals trending toward introversion, tend to prefer to work alone and need to "recharge" after social situations with people outside their core group of friends. The second category is the continuum of intuition and sensing (intuition spectrum). Individuals that are closer to their intuitive instincts and their impressions of a situation and take action according to their "gut instinct". Individuals on the sensing portion of the spectrum tend to plan activities from understanding and embracing the context of the situation around them. The third metric is the continuum of feeling and thinking (feeling spectrum). This metric is characterized by how individuals react to events and approach solving a problem. Individuals that are closer to the feeling side of the spectrum tend to focus on how other people will react to solutions and factor their decision-making process accounting for how it will make themselves and other people feel. Individuals in the thinking portion of the spectrum tend to be more dispassionately oriented, basing decisions more on facts as opposed to than how people will feel about them. The final stanine is the continuum between perceiving and judging (perceiving spectrum). This stanine is measured by how individuals work towards accomplishing goals. Individuals that are closer to the perceiving side of the spectrum tend to move between projects easily and are not deadline-oriented. Individuals in the judging portion of the spectrum tend to be much more deadline-oriented and tend to work on a project until terminus. The most important thing with each of these discriminators is that each of are continuums.

The Learning Communities

The Computer Science and Engineering learning community is defined by the Department of Computer Science and Engineering as the group of students studying the "broad discipline that deals with the analysis, design and synthesis of computer systems and their applications."

(CSCE) Students studying Computer Science and Engineering are programming-focused students that develop computer code as a function of software development. Most students plan work in a variety of industries, working in networking, hardware and software development, telecommunications, and research and development.

The Technology Management learning community is defined by the Department of Educational Administration and Human Resource Development as the group of students within the Technology Management degree that are studying in order to "succeed in a variety of roles in which technology applications and the process by which information and training are delivered and productivity enhanced." (EHRD) Students studying Technology Management are applied skill-focused students that work with technology such as computers, servers, and routers to develop business infrastructure. Students will work in a variety of industries, including working in networking, data management, telecommunications, and cybersecurity.

The Human Resource Development learning community is defined by the Department of Educational Administration and Human Resource Development as the group of students within the Human Resource Development program that are studying in order to prepare for "a wide range of potential employment and accommodation" for a "diverse education professional experience." (EHRD) Students studying Human Resource Development are training and development-focused students that create human resource interventions and study instructional methods for workplace-based education. Students will work in a variety of industries, as human resource trainers, managers, and organizational consultants.

Research Questions

Do students within a given learning community show discernable trends in personality identifiers?

This first research question will be the initial starting point for each of the learning communities. It will serve as a validation that each learning community shows distinct patterns internally. The null hypothesis is that learning communities will exhibit a quartic distribution per trait dimension that is distinct and will have local maximums near the curvilinear quartiles.

How do different learning communities' trends in personality dimensions compare individually and as a whole?

This second research question will show how learning communities have developed within these disciplines. The null hypothesis is that learning communities of Computer Science and Engineering and Technology Management will be more similar in all categories than when compared with Human Resource Development.

CHAPTER II

METHODS

The Population (N= 1,200) for this study was junior and senior Computer Science and Engineering, Human Resource Development, and Technology Management students. The population was sent an email containing an informed consent notification and request for the students to take a survey that was designed to identify personality dimensions. This survey was designed from previous work of Myers-Briggs in their four linear continuums of personality, extraversion, intuition, feeling, and perceiving. (Myers, et al.) The survey contained one question for each side of the spectrum, for each of the four dimensions. They were also given five personal demographic questions, and one word verification question, for a total of fourteen questions. The questions were scaled on a five point Likert scale ranging from negative two through positive two (-2,-1,0,1,2). This was due to the linear spectrum basis of each of the categories, in that a negative response towards one of the sides of the categories was the equivalent to a positive response to the opposite side of the spectrum. The population contained all students in each of these major field of study learning communities that responded to the survey instrument. In order for the data to be statistically significant, thirty participants from each learning community were required. The data from the instrument will be used to quantitatively identify the trends in each of these different personality markers, extraversion, intuition, feeling, and perceiving, for each of the studied learning communities (Computer Science and Engineering, Technology Management, and Human Resource Development). This data will be used to create a frequency analysis of personality markers and create a curve for each trait.

The data will then be compared with other learning communities to observe whether or not each of the learning communities were statistically significantly different from each other. The data was gathered and stored using the Qualtrics online data system. This allowed data to be securely transferred from the participant to the secure encrypted database that the research team was able to utilize. The two questions were answered through application of regression formulae to each data set to determine the data distribution curve. In order for the first question to be successful the data must have an R^2 value greater than 0.95. This level of R^2 value will show a well-defined regression line for the given data.

CHAPTER III

RESULTS

Initial Study Results

Human Resource Development students showed a substantial preference towards extroverted practices such as group projects and social energy flow. This is contrasted by Computer Science and Engineering students who had a substantial preference towards introverted practices such as individual work and private reflective energy. Technology Management students showed a less conclusive trend having pockets of highly introverted, extroverted, and undecided students. Computer Science and Engineering students also showed substantial preference to more logic, thinking, based practices on the feeling/ thinking dichotomy. Technology Management students showed a similar trend to the Computer Science and Engineering students despite having greater numbers in the feeling dichotomy. Human Resource Development students showed a stark contrast to both of the other learning communities having a substantial feeling trend. In the dichotomy of lifestyle preference (judging/ perceiving), Human Resource Development students showed a preference towards the judging dimension. Computer Science and Engineering students showed preference towards the perceiving dimension. Technology Management students showed a slight preference towards the perceiving dimension while showing decent samples in both dichotomies. All three learning communities showed a constant normal curve in perceiving functions, with the largest populations trending in the slightly sensing or slightly intuitive.

The results of the study have shown that there are measurable differences in each of the learning communities (Computer Science and Engineering, Human Resource Development and Technology Management). The most distinct difference were shown in the spectrums of Extroversion and Feeling. The bellow graphs and explanations show the different results as well as describe how they relate to each other.

The extroverted spectrum

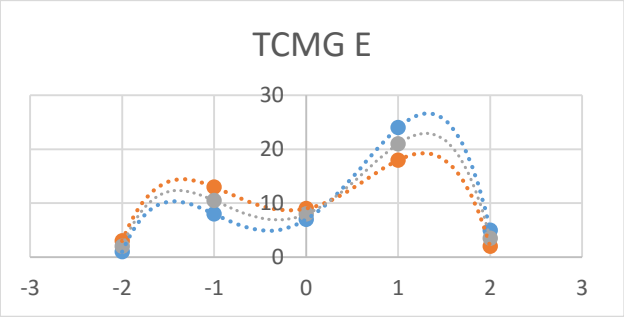

Figure 1: TCMG E Distribution Lines

The Technology Management (TCMG) positive extroverted equation (Blue line in Figure 1) is a bimodal distribution with the predictive equation of $y = -3.3333x^4 - 2.3333x^3 + 12.333x^2 + 10.333x + 7$ graph shows a moderate tendency for student to be extroverted while still providing a sizable population of introverts. The bimodal shape shows that there are dependable groups of students within both classifications, introverted and extroverted. This is due to the variety of students within the learning community. The emphasis within the extroverted dimension shows a greater need for group oriented learning.

The TCMG negative extroverted equation (Orange line in Figure 1) is a bimodal distribution with the predictive equation of y = -2.7083x4 - 0.9167x3 + 9.2083x2 + 3.4167x + 9 graph shows

a moderate tendency for student to be extroverted while still providing a sizable population of introverts. The bimodal shape shows that there are dependable groups of students within both classifications, introverted and extroverted. This is due to the variety of students within the learning community. The emphasis within the extroverted dimension shows a greater need for group oriented learning.

The TCMG average extroverted equation(Gray line in Figure 1) is a bimodal distribution with the predictive equation of $y = -3.0208x^4 - 1.625x^3 + 10.771x^2 + 6.875x + 8$ graph shows a moderate tendency for student to be extroverted while still providing a sizable population of introverts. The bimodal shape shows that there are dependable groups of students within both classifications, introverted and extroverted. This is due to the variety of students within the learning community. The emphasis within the extroverted dimension shows a greater need for group oriented learning.

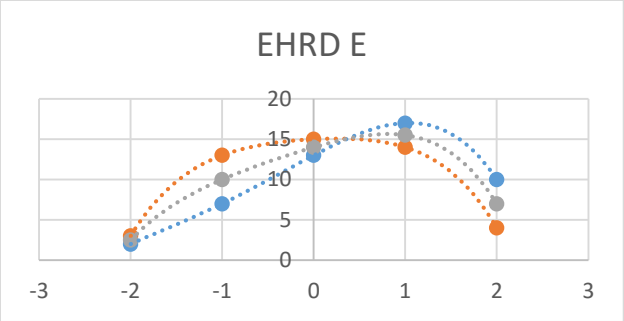

Figure 2: EHRD E Distribution Lines

The Human Resource Development (EHRD) positive extroverted equation (Blue line in Figure 2) is a positively shifted single tail distribution with the predictive equation of y = -x3 - 1.8571x2 + 6x + 13.514. The graph shows a high tendency for students to be more then slightly extroverted. The single tail shape shows that a large majority of the students trend towards extroverted with a decreasing number of introverts. This is due to the consistency of students within the learning community as extroverted orientated. The emphasis within the extroverted dimension shows a huge need for group oriented learning.

The EHRD negative extroverted equation (Orange line in Figure 2) is a classic negative quadratic distribution with the predictive equation of y = -3.0714x2 + 0.3x + 15.943. The graph shows a balance between both introverted and extroverted tendencies for all EHRD learning community students. The bell shape shows that a large majority of the students are balanced between both extroverted and introverted with a large number of undecided or balanced students. This is due to the balanced consistency of students within the learning community. The balanced population across the extroverted dimension shows a need for a balance between group oriented learning and individual reflective assignments.

The EHRD average extroverted equation (Gray line in Figure 2) is a positively shifted single tail distribution with the predictive equation of y =-2.4643x2 + 1.45x + 14.729. The graph shows a high tendency for students to be more then slightly extroverted. The single tail shape shows that a large majority of the students trend towards extroverted with a decreasing number of introverts. This is due to the consistency of students within the learning community as extroverted orientated. The emphasis within the extroverted dimension shows a huge need for group oriented learning.

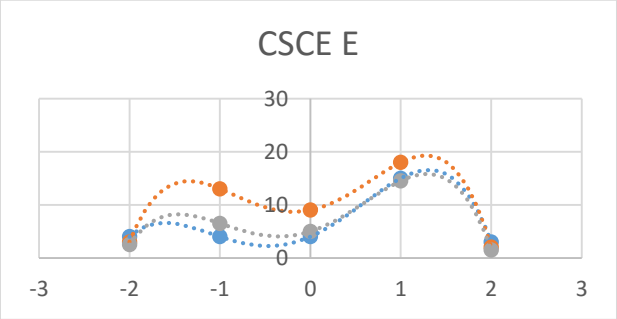

Figure 3: CSCE E Distribution Lines

The Computer Science and Engineering (CSCE) positive extroverted equation (Blue line in Figure 3) is a bimodal distribution with the predictive equation of y = -1.875x4 - 1.9167x3 + 7.375x2 + 7.4167x + 4 graph shows a moderate tendency for student to be extroverted while still providing a sizable population of introverts. The bimodal shape shows that there are dependable groups of students within both classifications, introverted and extroverted. This is due to the variety of students within the learning community. The emphasis within the extroverted dimension shows a greater need for group oriented learning.

The CSCE negative extroverted equation (Orange line in Figure 3) is a bimodal distribution with the predictive equation of y = -2.7083x4 - 0.9167x3 + 9.2083x2 + 3.4167x + 9graph shows a moderate tendency for student to be extroverted while still providing a sizable population of introverts. The bimodal shape shows that there are dependable groups of students within both classifications, Introverted and extroverted. This is due to the variety of students within the learning community. The emphasis within the extroverted dimension shows a greater need for group oriented learning.

The CSCE average extroverted equation (Gray line in Figure 3) is a bimodal distribution with the predictive equation of y = -2.0833x4 - 1.4167x3 + 7.5833x2 + 5.4167x + 5 graph shows a moderate tendency for student to be extroverted while still providing a sizable population of introverts. The bimodal shape shows that there are dependable groups of students within both classifications, introverted and extroverted. This is due to the variety of students within the learning community. The emphasis within the extroverted dimension shows a greater need for group oriented learning.

The Intuition Spectrum

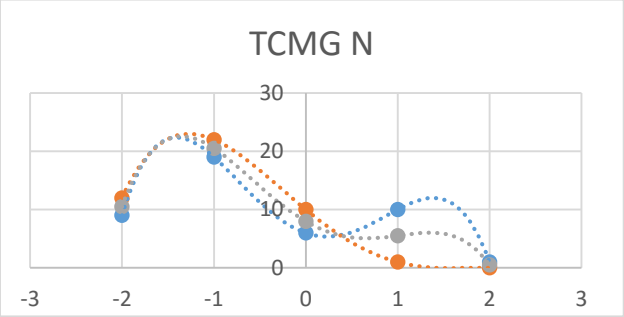

Figure 4: TCMG N Distribution Lines

The TCMG positive intuition equation (Blue line in Figure 4) is a bimodal distribution with the predictive equation of y = -2.9167x4 + 0.8333x3 + 11.417x2 - 5.3333x + 6 graph shows a high tendency for student to be sensing while still providing a sizable population of students scoring as intuitive. The bimodal shape shows that there are dependable groups of students within both classifications, sensing and intuitive. This is due to the variety of students within the learning community. The emphasis within the sensing dimension shows a greater need for practical application for effective learning.

The TCMG negative intuition equation (Orange line in Figure 4) is a negatively shifted single tailed distribution with the predictive equation of y = 2.5x3 - 1.3571x2 - 13x + 11.714 graph shows a high tendency for student to be sensing with a consistent decline as you move towards intuitive. The single tailed shape shows that there is a large trend of students that score in the sensing dimension with a decreasing amount of students in the intuition dimension. This is due to the consistency of students within the learning community toward the sensing category. The emphasis within the sensing dimension shows a greater need for practical application based learning.

The TCMG average intuition equation (Gray line in Figure 4) is a slightly bimodal distribution with the predictive equation of y = -1.875x4 + 1.6667x3 + 6.875x2 - 9.1667x + 8 graph shows a high tendency for student to be sensing while still providing a slight population of intuition orientated students. The slightly bimodal shape shows that there are groups of students within both classifications; however the equation highly trends to the negative dimension due to the results of the negatively orientated question. The emphasis within the sensing dimension shows a greater need for practical application based learning.

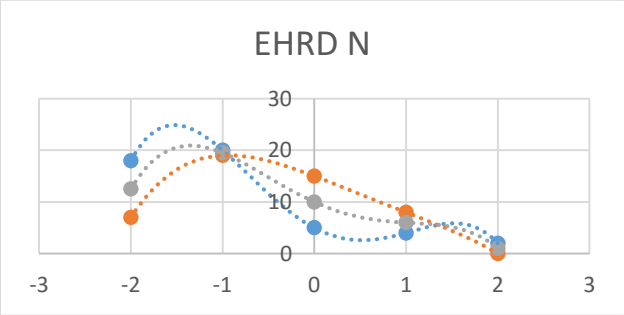

Figure 5: EHRD N Distribution Lines

The EHRD positive intuition equation (Blue line in Figure 5) is a bimodal distribution with the predictive equation of y = -1.9167x4 + 1.3333x3 + 8.9167x2 - 9.3333x + 5. The graph shows a high tendency for students to be sensing while still maintaining a small portion of intuition orientated students. The bimodal shape shows that although a large majority of the students trending towards sensing, a small portion of students trend towards intuition. This is due to the semi-consistency of students within the learning community as primarily sensing orientated. The emphasis within the sensing dimension shows a need for practical application based learning. The EHRD negative extroverted equation (Orange line in Figure 5) is a negatively shifted single tailed distribution with the predictive equation of y = 1.25x3 - 3.0714x2 - 6.75x + 15.943. The

graph shows a greater tendency for students to score as sensing. The single tailed shape shows that a large majority of the students are sensing with a decreasing number of students scoring in the intuition category. This is due to the consistency of students within the learning community for this category. The emphasis within the sensing dimension shows a need for practical application based learning.

The EHRD average intuition equation (Gray line in Figure 5) is a slightly bimodal distribution with the predictive equation of y = -1.1875x4 + 1.2917x3 + 3.9375x2 - 8.0417x + 10. The graph shows a high tendency for student to be sensing while still providing a slight population of intuition orientated students. The slightly bimodal shape shows that there are groups of students within both classifications; however the equation highly trends to the negative dimension due to the results of the negatively orientated question. The emphasis within the sensing dimension shows a greater need for practical application based learning.

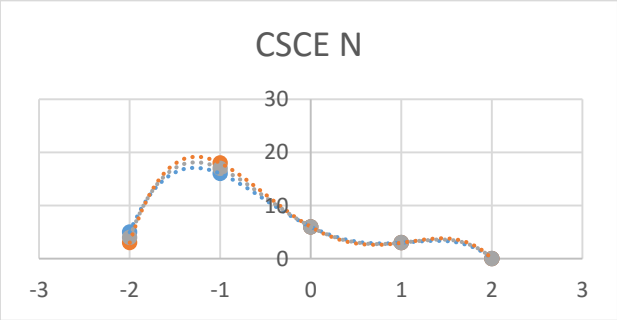

Figure 6: CSCE N Distribution Lines

The CSCE positive intuition equation (Blue line in Figure 6) is a slightly bimodal distribution with the predictive equation of y = -1.4583x4 + 1.75x3 + 4.9583x2 - 8.25x + 6. The graph shows a high tendency for student to be sensing while still providing a very slight population of

intuition orientated students. The slightly bimodal shape shows that there are groups of students within both classifications; however the equation highly trends vastly to the negative dimension. The emphasis within the sensing dimension shows a greater need for practical application based learning.

The CSCE negative intuition equation (Orange line in Figure 6) is a slightly bimodal distribution with the predictive equation of y = -1.875x4 + 2.25x3 + 6.375x2 - 9.75x + 6. The graph shows a high tendency for student to be sensing while still providing a very slight population of intuition orientated students. The slightly bimodal shape shows that there are groups of students within both classifications; however the equation highly trends vastly to the negative dimension. The emphasis within the sensing dimension shows a greater need for practical application based learning.

The CSCE average intuition equation (Gray line in Figure 6) is a slightly bimodal distribution with the predictive equation of y = -1.6667x4 + 2x3 + 5.6667x2 - 9x + 6. The graph shows a high tendency for student to be sensing while still providing a very slight population of intuition orientated students. The slightly bimodal shape shows that there are groups of students within both classifications; however the equation highly trends vastly to the negative dimension. The emphasis within the sensing dimension shows a greater need for practical application based learning.

The Feeling Spectrum

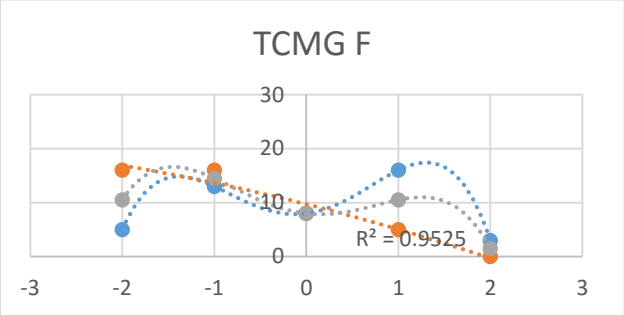

Figure 7: TCMG F Distribution Lines

The TCMG positive feeling equation (Blue line in Figure 7) is a bimodal distribution with the predictive equation of y = -2.5x4 - 0.6667x3 + 9x2 + 2.1667x + 8. The graph shows a high tendency for student to be feeling while still providing a sizable population of students scoring as thinking. The bimodal shape shows that there are dependable groups of students within both classifications, thinking and feeling. This is due to the variety of students within the learning community. The emphasis within the feeling dimension shows a greater need for practical, relatable examples for effective learning.

The TCMG negative feeling equation (Orange line in Figure 7) is a right side of a quadratic distribution with the predictive equation of y = -0.3571x2 - 4.3x + 9.7143. The graph shows an almost negative linear tendency for student to be thinking with a consistent decline as you move towards feeling. The shape of this line shows that there is an extremely strong trend of students that score in the Thinking dimension with a decreasing amount of students in the feeling dimension. This is due to the consistency of students within the learning community toward the Feeling category. The emphasis within the thinking dimension shows a greater need for abstract problem solving based learning.

The TCMG average Feeling equation (Gray line in Figure 7) is a slightly bimodal distribution with the predictive equation of y = -1.6667x4 - 0.0833x3 + 6.1667x2 - 1.9167x + 8. The graph shows a high tendency for student to be thinking while still providing an almost balanced population of feeling orientated students. The slightly bimodal shape shows that there are groups of students within both classifications; however the equation trends to the negative dimension due to the results of the negatively orientated question. The emphasis within the thinking and feeling dimensions shows a greater need for both problem solving and relatable orientated learning.

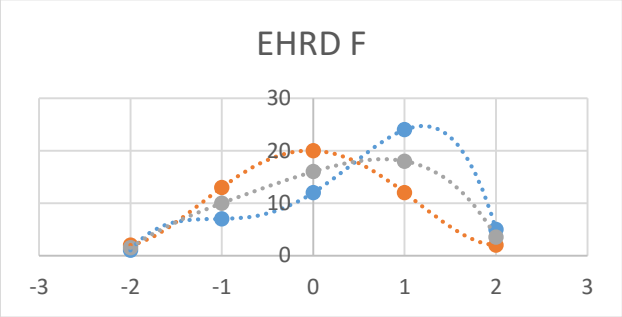

Figure 8: EHRD F Distribution Lines

The EHRD positive feeling equation (Blue line in Figure 8) is slightly bimodal distribution with the predictive equation of y = -1.9167x4 - 2.5x3 + 5.4167x2 + 11x + 12. The graph shows a high tendency for students to be feeling with a small population of students of the thinking orientation. The shape of the curve shows that a large majority of the students trend towards feeling. This is due to the consistency of students within the learning community as primarily feeling orientated. The emphasis within the feeling dimension shows a need for practical, relatable examples for optimal learning.

The EHRD negative feeling equation (Orange line in Figure 8) is a classic negative quadratic distribution with the predictive equation of y = -4.0714x2 - 0.1x + 17.943. The graph shows a balance between both thinking and feeling tendencies for all EHRD learning community students. The bell shape shows that a large majority of the students are balanced between both thinking and feeling with a large number of undecided or balanced students. This is due to the balanced consistency of students within the learning community. The balanced population across the feeling dimension shows a need for a balance between problem solving and realistic scenario learning.

The EHRD average feeling equation (Gray line in Figure 8) is a positively shifted single tailed distribution with the predictive equation of y = -1.1667x3 - 3.5714x2 + 5.1667x + 16.943. The graph shows a high tendency for students to be feeling with a steady decline towards the thinking orientation. The single tailed shape shows that a large majority of the students trend towards feeling. This is due to the consistency of students within the learning community as primarily feeling orientated. The emphasis within the feeling dimension shows a need for practical, relatable examples for optimal learning.

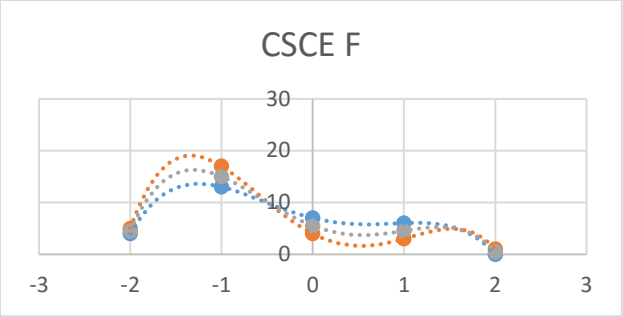

Figure 9: CSCE F Distribution Lines

The CSCE positive feeling equation (Blue line in Figure 9) is a slightly bimodal distribution with the predictive equation of y = -1.25x4 + 0.8333x3 + 3.75x2 - 4.3333x + 7. The graph shows a high tendency for student to be thinking while still providing a very slight population of feeling orientated students. The slightly bimodal shape shows that there are groups of students within both classifications; however the equation highly trends vastly to the negative dimension. The emphasis within the thinking dimension shows a greater need for abstract problem solving based learning.

The CSCE negative feeling equation (Orange line in Figure 9) is a slightly bimodal distribution with the predictive equation of y = -2.0833x4 + 2x3 + 8.0833x2 - 9x + 4. The graph shows a high tendency for student to be thinking while still providing a very slight population of feeling orientated students. The slightly bimodal shape shows that there are groups of students within both classifications; however the equation highly trends vastly to the negative dimension. The emphasis within the thinking dimension shows a greater need for abstract problem solving based learning.

The CSCE average feeling equation (Gray line in Figure 9) is a slightly bimodal distribution with the predictive equation of y = -1.6667x4 + 1.4167x3 + 5.9167x2 - 6.6667x + 5.5. The graph

shows a high tendency for student to be thinking while still providing a very slight population of feeling orientated students. The slightly bimodal shape shows that there are groups of students within both classifications; however the equation highly trends vastly to the negative dimension. The emphasis within the thinking dimension shows a greater need for abstract problem solving based learning.

The Perceiving Spectrum

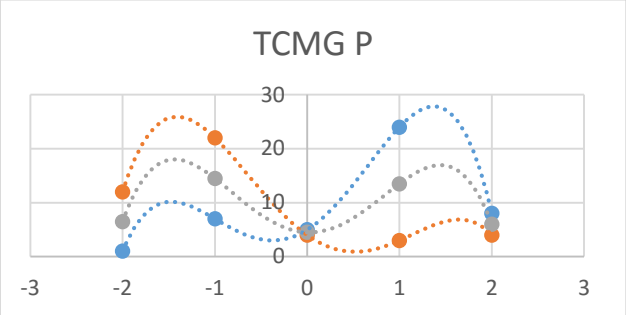

Figure 10: TCMG P Distribution Lines

The TCMG positive perceiving equation (Blue line in Figure 10) is a bimodal distribution with the predictive equation of y = -3.5417x4 - 2.25x3 + 14.042x2 + 10.75x + 5. The graph shows a strong tendency for student to be perceiving while still providing a sizable population of students displaying the judging trait. The bimodal shape shows that there is a very strong population of perceiving orientated individuals while still having a sizable population of individuals displaying the judging trait. This is due to the variety of students within the learning community. The emphasis within the perceiving dimension shows a greater need for fluidity between projects and deadlines.

The TCMG negative perceiving equation (Orange line in Figure 10) is a bimodal distribution with the predictive equation of y = -2.5x4 + 2.5x3 + 11x2 - 12x + 4. The graph shows a strong tendency for student to be judging while still providing a sizable population of students displaying the perceiving trait. The bimodal shape shows that there is a very strong population of judging orientated individuals while still having a showing of individuals displaying the perceiving trait. This is due to the variety of students within the learning community. The

emphasis within the judging dimension shows a greater need for focusing on one project at a time and singular deadlines.

The TCMG average perceiving equation (Gray line in Figure 10) is a bimodal distribution with the predictive equation of y = -3.0208x4 + 0.125x3 + 12.521x2 - 0.625x + 4.5. The graph shows a moderate tendency for student to be either perceiving or judging. The bimodal shape shows that there are dependable groups of students within both classifications, perceiving and judging. This is due to the variety of students within the learning community. The balance of the two dimensions show a need for a balance between fluidity and consistency for deadlines and multiplicity of projects.

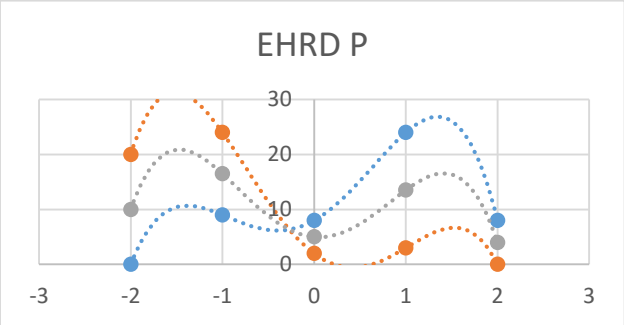

Figure 11: EHRD P Distribution Lines

The EHRD positive perceiving equation (Blue line in Figure 11) is a bimodal distribution with the predictive equation of y = -3.1667x4 - 1.8333x3 + 11.667x2 + 9.3333x + 8. The graph shows a strong tendency for student to be perceiving while still providing a sizable population of students displaying the judging trait. The bimodal shape shows that there is a very strong population of perceiving orientated individuals while still having a sizable population of individuals displaying the judging trait. This is due to the variety of students within the learning

community. The emphasis within the perceiving dimension shows a greater need for fluidity between projects and deadlines.

The EHRD negative perceiving equation (Orange line in Figure 11) is a bimodal distribution with the predictive equation of y = -3.1667x4 + 1.8333x3 + 14.667x2 - 12.333x + 2. The graph shows a strong tendency for student to be judging while still providing a sizable population of students displaying the perceiving trait. The bimodal shape shows that there is a very strong population of judging orientated individuals while still having a showing of individuals displaying the perceiving trait. This is due to the variety of students within the learning community. The emphasis within the judging dimension shows a greater need for focusing on one project at a time and singular deadlines.

The EHRD average perceiving equation (Gray line in Figure 11) is a bimodal distribution with the predictive equation of y = -3.1667x4 - 9E-13x3 + 13.167x2 - 1.5x + 5. The graph shows a moderate tendency for student to be either perceiving or judging. The bimodal shape shows that there are dependable groups of students within both classifications, perceiving and judging. This is due to the variety of students within the learning community. The balance of the two dimensions show a need for a balance between fluidity and consistency for deadlines and multiplicity of projects.

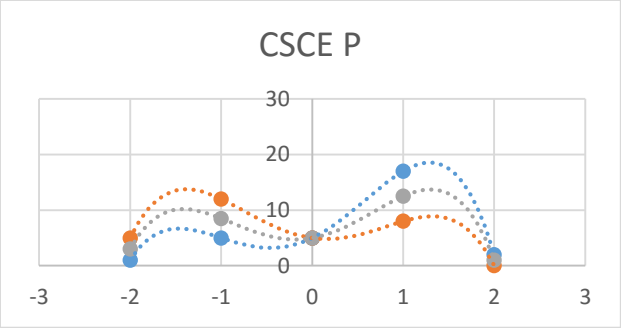

Figure 12: CSCE P Distribution Lines

The CSCE positive perceiving equation (Blue line in Figure 12) is a bimodal distribution with the predictive equation of y = -2.2917x4 - 1.9167x3 + 8.2917x2 + 7.9167x + 5. The graph shows a strong tendency for student to be perceiving while still providing a sizable population of students displaying the judging trait. The bimodal shape shows that there is a strong population of perceiving orientated individuals while still having a sizable population of individuals displaying the judging trait. This is due to the variety of students within the learning community. The emphasis within the perceiving dimension shows a greater need for fluidity between projects and deadlines.

The CSCE negative perceiving equation (Orange line in Figure 12) is a bimodal distribution with the predictive equation of y = -1.875x4 + 0.25x3 + 6.875x2 - 2.25x + 5. The graph shows a strong tendency for student to be judging while still providing a sizable population of students displaying the perceiving trait. The bimodal shape shows that there is a strong population of judging orientated individuals while still having a showing of individuals displaying the perceiving trait. This is due to the variety of students within the learning community. The emphasis within the judging dimension shows a greater need for focusing on one project at a time and singular deadlines.

The CSCE average perceiving equation (Gray line in Figure 12) is a bimodal distribution with the predictive equation of y = -2.0833x4 - 0.8333x3 + 7.5833x2 + 2.8333x. The graph shows a moderate tendency for student to be either perceiving or judging. The bimodal shape shows that there are dependable groups of students within both classifications, perceiving and judging. This is due to the variety of students within the learning community. The balance of the two dimensions show a need for a balance between fluidity and consistency for deadlines and multiplicity of projects.

Overall Results

Human Resource Development students showed a preference towards extroverted practices such as group projects and social energy flow. This is contrasted with Computer Science and Engineering students who had a more varied preference towards both introverted and extraverted practices with a greater population of extroverts reported. Technology Management students showed a less conclusive trend then Computer science having more substantial and balanced pockets of both introverted and extroverted students. Computer Science and Engineering students also showed substantial preference to more logic, thinking, based practices on the feeling/ thinking dichotomy. Technology Management students showed a similar trend to the Computer Science and Engineering students despite having greater numbers in the feeling dichotomy. Human Resource Development students showed a stark contrast to both of the other learning communities having a substantial feeling trend. In the dichotomy of lifestyle preference (judging/ perceiving), all three learning communities showed a large variety in their results. All three learning communities also show a similar curve in the intuition category, with the largest populations trending in the sensing dimension.

CHAPTER IV

CONCLUSION

Do students within a given learning community show discernable trends in personality identifiers?

Based on the data gathered, each of the individual learning communities had distinct trends overall for each personality identifier. Extraversion, Intuition and Feeling showed the greatest consistency across questions as well as showed the most consistent trends for each identifier. This indicates that these traits are the most well-defined within the learning communities as well as the most accurately represented for each of the populations. The Perceiving trait however, was less consistent between questions. This lack of consistency indicates that more data is necessary to draw conclusive trends within the perceiving portion of the tool. With more data, it would be possible to show the possible changing or adaptation of the Perceiving trait as students adjust to rigor of college life.

Technology Management Learning Community

The Technology Management (TCMG) learning community showed relative consistency across its personality identifiers. The extroverted and intuition categories showed the highest levels of consistency across the continuum, and between questions. The feeling category showed moderate consistency for the TCMG category and the perceiving showed a large fluctuation between both questions.

The TCMG extroverted equations showed consistency as bimodal distributions that showed a moderate tendency for student to be extroverted while still providing a sizable population of introverts. This bimodal shape shows that there are dependable groups of students within both the introverted and extroverted classifications. This is due to the relative consistence of the individual students within the learning community, although each individual showed a variety of degrees of extroversion. The emphasis within the extroverted dimension shows a greater need for group oriented learning. This is due to the social recharging nature of the extroverted students. The group oriented learning will however be a developmental challenge for the introverted population and should be treated as such when designing the groups and assignments. Although group oriented learning is highly needed for the extroverted members of the TCMG population an aspect of personal reflection should be used not only as an offsetting balance for the introverted population, but as development for the extroverted individuals that struggle with reflection. As with the introverts needing possible extra assistance with group oriented learning the extroverts should be given extra support with the regards of reflection based assignments.

The TCMG intuition equations showed slightly bimodal distribution with a high tendency for student to be sensing while still providing a slight population of intuition orientated students. The shapes of the curves show that there are groups of students within both classifications; however the equation highly trends to the sensing dimension. The emphasis within the sensing dimension shows a greater need for practical application based learning. This practical application based learning is highly critical for sensing students due to their tendency to trust their experiences to solve issues. By providing them with practical application based learning they are able to use the skills that they have learned as past experience in the future.

The TCMG feeling equations showed less consistency then the extroverted and intuition classifications however showed interesting data none the less. The slightly bimodal distribution pattern of the average equation shows a high tendency for student to be thinking while still providing a balancing population of feeling orientated students. The emphasis within the thinking and feeling dimensions shows a greater need for both problem solving and relatable orientated learning. This concept is important due to the nature of the individuals within the major. As students in this learning community show large populations of both thinking and feeling a balance must be maintained between fact based problem solving and empathetic/ feeling, relation orientated learning.

The TCMG learning community had a much more varied response within the perceiving category. The two major factors of this category are the concept of deadline orientated and the concept of fluidity between projects. Students responded positively to both of these, contradicting, aspects creating inconsistent results for the overall category.

Human Resource Development Learning Community

The Human Resource Development (EHRD) learning community showed relative consistency across its personality identifiers. The extroverted and intuition categories showed the highest levels of consistency across the continuum, and between questions. The feeling category showed moderate consistency for the EHRD category and the perceiving showed a large fluctuation between both questions.

The EHRD extroverted equations showed less diversity in its distributions then the students in the other learning communities in that it showed a much greater tendency for student to be extroverted or neutral then introverted. This causes a much greater trend in the extroverted dimension of the category. The emphasis within the extroverted dimension shows a greater need for group oriented learning. This is due to the social recharging nature of the extroverted students as well as the general nature of the human resources field. Personal reflection should be used as development for the extroverted individuals that struggle with reflection. The extroverted students extra assistance with group oriented learning the extroverts should be given extra will tend to need extra support with the regards of reflection based assignments and should this should be taken into consideration when working with the students.

The EHRD intuition equations showed less diversity in its distributions then the students in the other learning communities in that it showed a much greater tendency for student to be sensing or neutral then intuitive. This causes a much greater trend in the sensing dimension of the category. The emphasis within the sensing dimension shows a greater need for practical application based learning. This practical application based learning is highly critical for sensing students due to their tendency to trust their experiences to solve issues. By providing them with practical application based learning they are able to use the skills that they have learned as past experience in the future. Students with high levels of sensing tend to receive the most out of this type of education.

The EHRD feeling equations showed less consistency then the extroverted and intuition classifications however showed interesting data none the less. The distribution pattern showed a

much greater tendency for student to be feeling or neutral then thinking orientated. This causes a much greater trend in the feeling dimension of the category. The emphasis within the feeling dimension shows a greater need for practical, relatable examples for optimal learning. This is critical for this population due to the orientation of their distribution due to the nature of the feeling dimension. By adding examples that can have feeling associated with them, feeling orientated students can better understand and connect with the assignment. This connection allows for a much greater retention of learning, especially in individuals in the feeling portion of the spectrum.

The EHRD learning community had a much more varied response within the perceiving category. The two major factors of this category are the concept of deadline orientated and the concept of fluidity between projects. Students responded positively to both of these, contradicting, aspects creating inconsistent results for the overall category.

Computer Science and Engineering Learning Community

The Computer Science and Engineering (CSCE) learning community showed the greatest consistency across its personality identifiers. The extroverted and intuition and feeling categories showed extremely high levels of consistency across the continuum, and between questions. The perceiving category as with the other communities showed a large fluctuation between both questions.

The CSCE extroverted equations showed consistency as bimodal distributions that showed a moderate tendency for student to be extroverted while still providing a sizable population of

introverts. This bimodal shape shows that there are dependable groups of students within both the introverted and extroverted classifications. This is due to the relative consistence of the individual students within the learning community, although each individual showed a variety of degrees of extroversion. The emphasis within the extroverted dimension shows a greater need for group oriented learning. This is due to the social recharging nature of the extroverted students. The group oriented learning will however be a developmental challenge for the introverted population and should be treated as such when designing the groups and assignments. Although group oriented learning is highly needed for the extroverted members of the CSCE population an aspect of personal reflection should be used not only as an offsetting balance for the introverted population, but as development for the extroverted individuals that struggle with reflection. As with introverts needing possible extra assistance with group oriented learning, extroverts should be given extra support with the regards of reflection-based assignments.

The CSCE intuition equations showed less diversity in its distribution then the students in the other learning communities in that it showed a much greater tendency for student to be highly consistently sensing. The emphasis within the sensing dimension shows a greater need for practical application based learning. This practical application based learning is highly critical for sensing students due to their tendency to trust their experiences to solve issues. By providing them with practical application based learning they are able to use the skills that they have learned as past experience in the future. Students with high levels of sensing tend to receive the most out of this type of education.

The feeling equations showed the greatest consistency for students than any other learning community. The distribution pattern showed a much greater tendency for student to be thinking orientated rather than feeling or neutral orientated. The emphasis within the thinking dimension shows a greater need for abstract problem solving based learning. This is critical for this population due to the orientation of their distribution due to the nature of the thinking dimension. By adding examples that can have large amounts of data, and an aspect of problem solving associated with them, thinking orientated students can feel more accomplished with the assignment. This aspect of problem solving also stimulates their memory greater as well as repetition.

The CSCE learning community had a much more varied response within the perceiving category. The two major factors of this category are the concept of deadline orientated and the concept of fluidity between projects. Students responded positively to both of these, contradicting, aspects creating inconsistent results for the overall category.

How do different learning communities' trends in personality compare?

Based on the data gathered, the different learning communities showed distinct individual trends for each of the personality identifiers. When compared to each other, Technology Management and Computer Science and Engineering students shared similar trends to each other in three of the four categories, Extraversion, Intuition and Feeling. All three groups shared similar trends in Intuition, a negative trend. This indicates that students in all three learning communities tend to plan based off of experience, rather than act based off of instinct. Technology Management and Human Resource development students showed a greater likeness for each of the individual

Perceiving questions, causing their trends to be more similar when compared to the Computer Science and Engineering students. This trait produced less consistent results as a category; however, due to the similarity between the environment in both of these learning communities, appears to be in a transitional period, due to their shared environment.

CHAPTER V

FURTHER REASEARCH

The continued expansion of this research will be in two directions: the development of an expanded survey that will more accurately identify personality trends within studied learning communities, and an expansion into different learning communities. These two expansions will allow for a better understanding of both of the research questions, as they will allow for clearer data and more expansive comparisons of learning communities. Through the expansion into new learning communities, greater understanding of how and why different learning communities relate to each other will be achieved. The extensions of this project will result in a better developed understanding of members of each learning community can better choose learning communities to become involved in and how personality markers can be identified to provide more meaningful learning, mentorship, and cross-community engagement opportunities by developing a new understanding of the unique nature of the student population.

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APPENDIX A

RESULTS TABLE

Select one option for each of the given statements - I enjoy working in groups	**Strongly Disagree**	0	1	2	4	7
	Disagree	8	8	7	4	27
	Neither Agree nor Disagree	7	7	13	4	31
	Agree	21	24	17	15	77
	Strongly Agree	4	5	10	3	22
	Total	**40**	**45**	**49**	**30**	**164**

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Other	5	40	8	62.5
TCMG	5	45	9	77.5
EHRD	5	49	9.8	32.7
CSCE	5	30	6	25.5

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*

						0.11504
Between Groups	40.4	3	13.46667	0.271779	0.84483	5
Within Groups	792.8	16	49.55			
Total	833.2	19				

Select one option for each of the given statements - I spend more time reflecting then doing	**Strongly Disagree**	2	2	4	0	8
	Disagree	14	18	14	14	60
	Neither Agree nor Disagree	9	9	15	6	39
	Agree	11	13	13	9	46
	Strongly Agree	4	3	3	1	11
	Total	**40**	**45**	**49**	**30**	**164**

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Other	5	40	8	24.5
TCMG	5	45	9	45.5

EHRD	5	49	9.8	33.7
CSCE	5	30	6	33.5

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	40.4	3	13.46667	0.392614	0.759988	0.11504 5
Within Groups	548.8	16	34.3			
Total	589.2	19				

Select one option for each of the given statements - I move between different projects regularly	**Strongly Disagree**	1	1	0	1	3
	Disagree	3	7	9	5	24
	Neither Agree nor Disagree	7	5	8	5	25
	Agree	25	24	24	17	90
	Strongly Agree	4	8	8	2	22

	Total	**40**	**45**	**49**	**30**	**164**

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Other	5	40	8	95
TCMG	5	45	9	77.5
EHRD	5	49	9.8	76.2
CSCE	5	30	6	41

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	40.4	3	13.46667	0.185939	0.904403	0.11504 5
Within Groups	1158.8	16	72.425			
Total	1199.2	19				

Select one option for each of the given statements - I tend to trust	**Strongly Disagree**	1	0	0	0	1
	Disagree	1	1	8	3	13
	Neither Agree nor Disagree	10	10	15	6	41

my experience over my impressions	**Agree**	22	22	19	18	81
	Strongly Agree	6	12	7	3	28
	Total	**40**	**45**	**49**	**30**	**164**

Groups	*Count*	*Sum*	*Average*	*Variance*
Other	5	40	8	75.5
TCMG	5	45	9	81
EHRD	5	49	9.8	54.7
CSCE	5	30	6	49.5

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	40.4	3	13.46667	0.206623	0.89031	0.115045
Within Groups	1042.8	16	65.175			
Total	1083.2	19				

Select one option for each of the given statements - I am deadline oriented	**Strongly Disagree**	0	4	0	0	4
	Disagree	2	3	3	8	16
	Neither Agree nor Disagree	5	4	2	5	16
	Agree	18	22	24	12	76
	Strongly Agree	15	12	20	5	52
	Total	**40**	**45**	**49**	**30**	**164**

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Other	5	40	8	64.5
TCMG	5	45	9	66
EHRD	5	49	9.8	127.2
CSCE	5	30	6	19.5

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	40.4	3	13.46667	0.194324	0.89872	0.115045
Within Groups	1108.8	16	69.3			
Total	1149.2	19				

Select one option for each of the given statements - I like to keep planning to a minimum	**Strongly Disagree**	12	9	18	5	44
	Disagree	18	19	20	16	73
	Neither Agree nor Disagree	5	6	5	6	22
	Agree	4	10	4	3	21
	Strongly Agree	1	1	2	0	4
	Total	**40**	**45**	**49**	**30**	**164**

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*

Other	5	40	8	47.5
TCMG	5	45	9	43.5
EHRD	5	49	9.8	72.2
CSCE	5	30	6	36.5

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	40.4	3	13.46667	0.269738	0.846269	0.115045
Within Groups	798.8	16	49.925			
Total	839.2	19				

Select one option for each of the given statements - I make decisions based on fact over feeling	**Strongly Disagree**	2	0	2	1	5
	Disagree	6	5	12	3	26
	Neither Agree nor Disagree	9	8	20	4	41
	Agree	18	16	13	17	64
	Strongly Agree	5	16	2	5	28
	Total	**40**	**45**	**49**	**30**	**164**

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Other	5	40	8	37.5
TCMG	5	45	9	49
EHRD	5	49	9.8	60.2

CSCE	5	30	6	40

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	40.4	3	13.46667	0.28852	0.833017	0.115045
Within Groups	746.8	16	46.675			
Total	787.2	19				

Select one option for each of the given statements - I value how something will make people feel rather then whether it is true	**Strongly Disagree**	4	5	1	4	14
	Disagree	13	13	7	13	46
	Neither Agree nor Disagree	9	8	12	7	36
	Agree	12	16	24	6	58
	Strongly Agree	2	3	5	0	10
	Total	**40**	**45**	**49**	**30**	**164**

SUMMARY

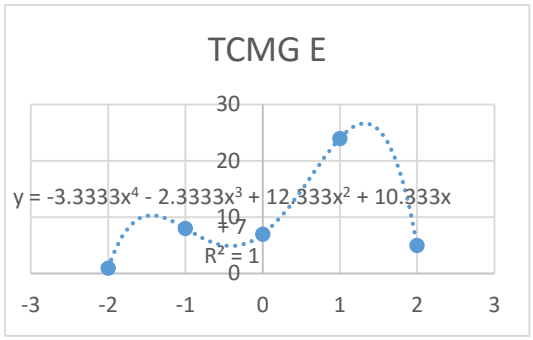
Groups	*Count*	*Sum*	*Average*	*Variance*
Other	5	40	8	23.5
TCMG	5	45	9	29.5
EHRD	5	49	9.8	78.7
CSCE	5	30	6	22.5

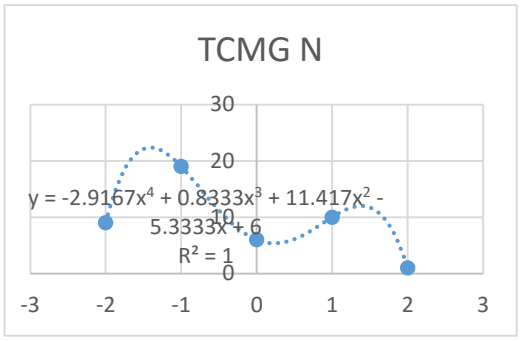
ANOVA

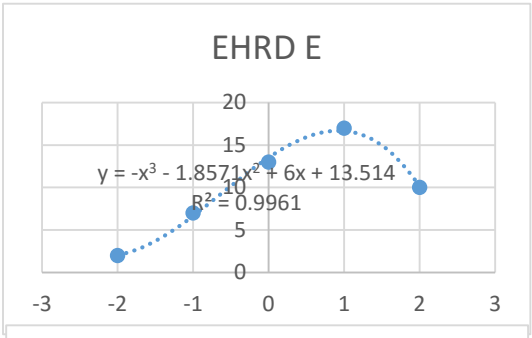
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	40.4	3	13.46667	0.34933	0.790159	0.115045
Within Groups	616.8	16	38.55			
Total	657.2	19				

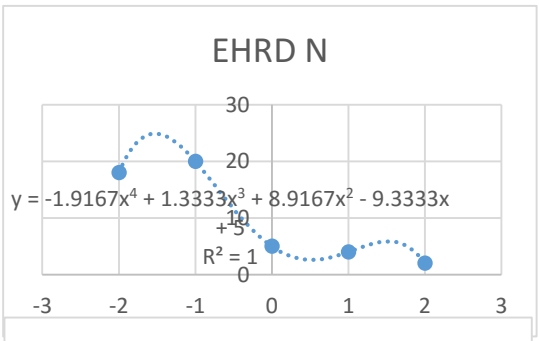
APPENDIX B

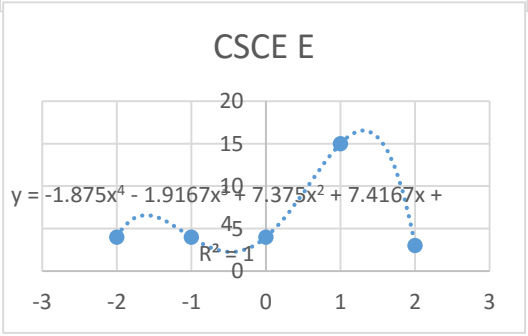
POSITIVE QUESTIONS GRAPHS

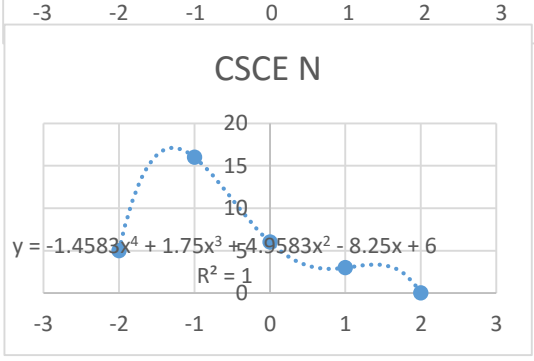


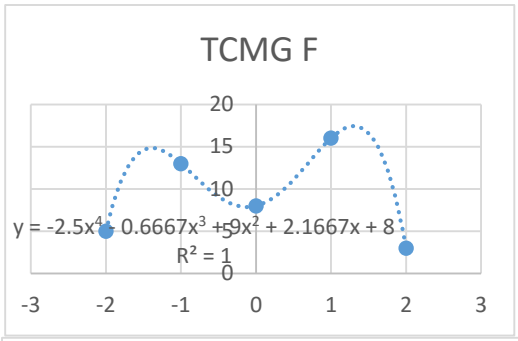


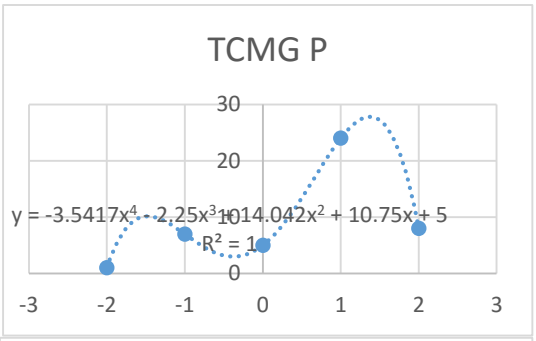


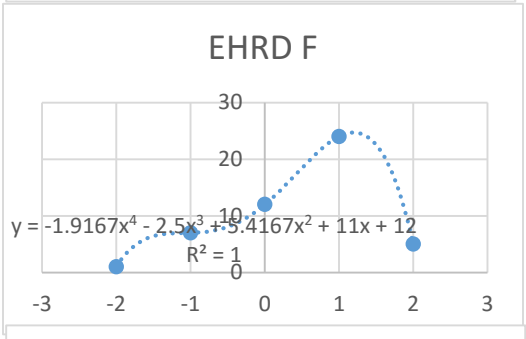


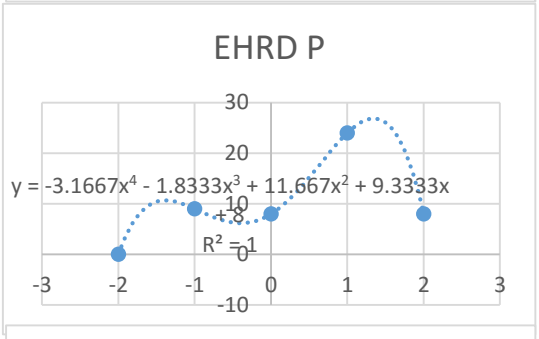


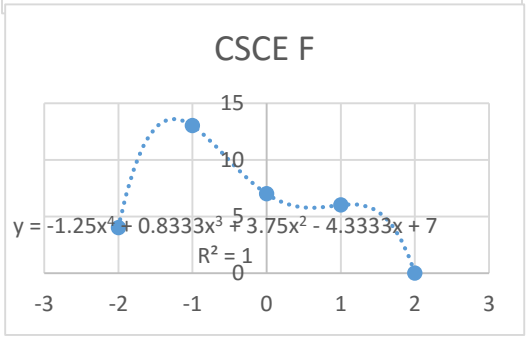


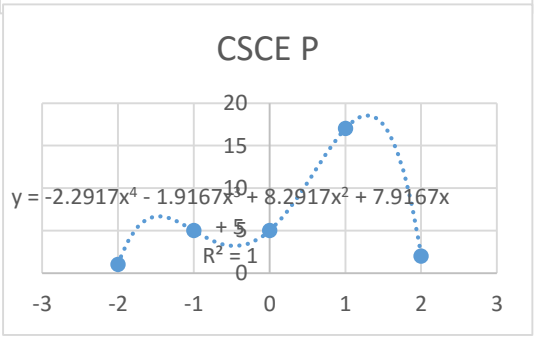

TCMG F
y = -2.5x⁴ - 0.6667x³ + 9x² + 2.1667x + 8
R² = 1


TCMG P
y = -3.5417x⁴ - 2.25x³ + 14.042x² + 10.75x + 5
R² = 1


EHRD F
y = -1.9167x⁴ - 2.5x³ + 5.4167x² + 11x + 12
R² = 1

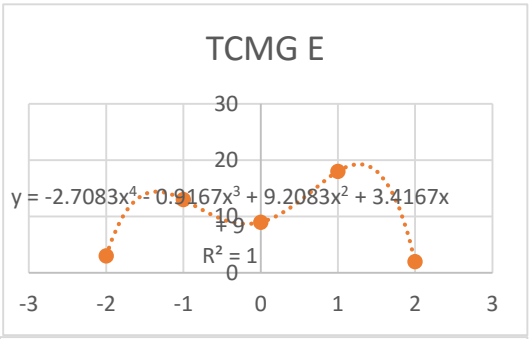

EHRD P
y = -3.1667x⁴ - 1.8333x³ + 11.667x² + 9.3333x + 8
R² = 1

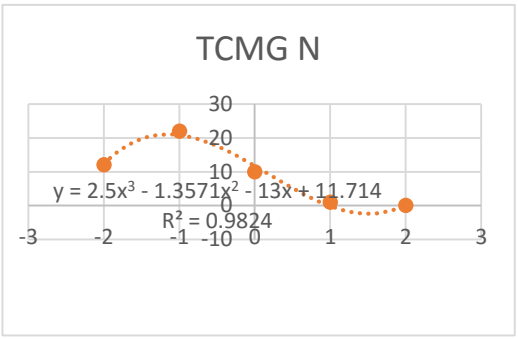

CSCE F
y = -1.25x⁴ + 0.8333x³ + 3.75x² - 4.3333x + 7
R² = 1

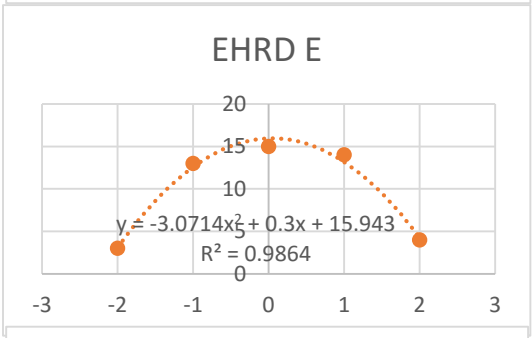

CSCE P
y = -2.2917x⁴ - 1.9167x³ + 8.2917x² + 7.9167x + 5
R² = 1

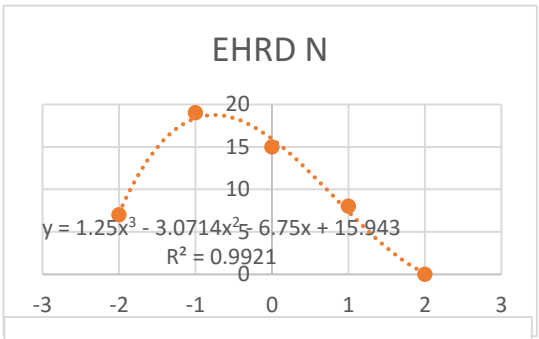
APPENDIX C

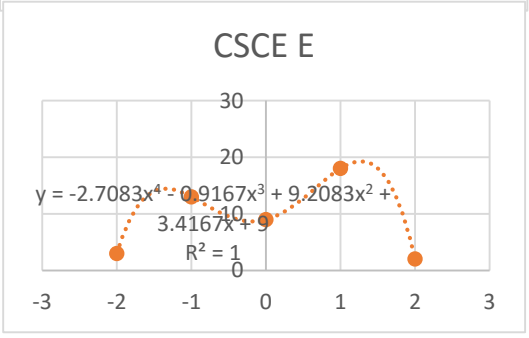
NEGATIVE QUESTIONS GRAPHS

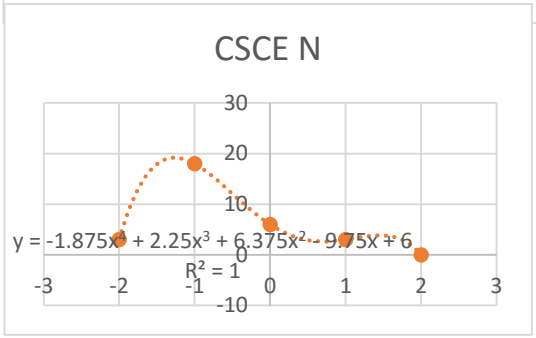


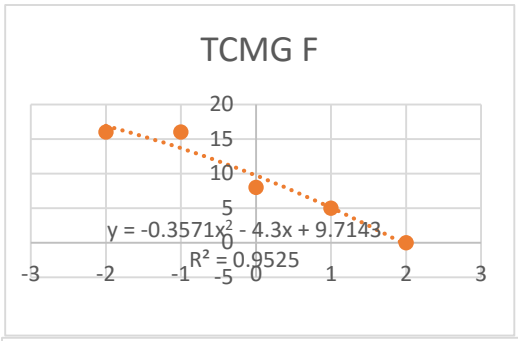


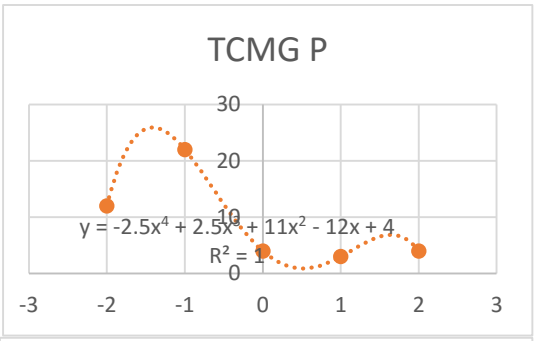


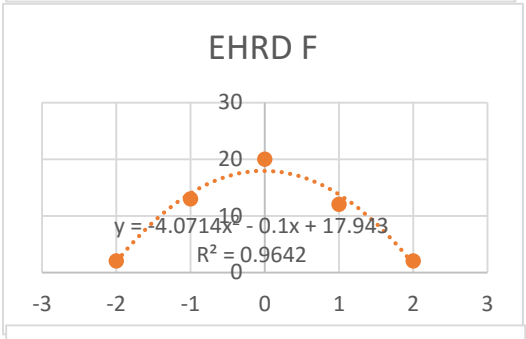


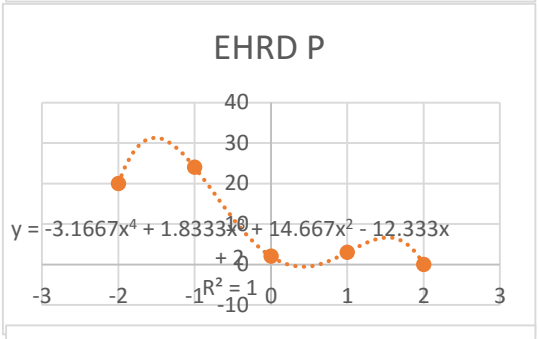


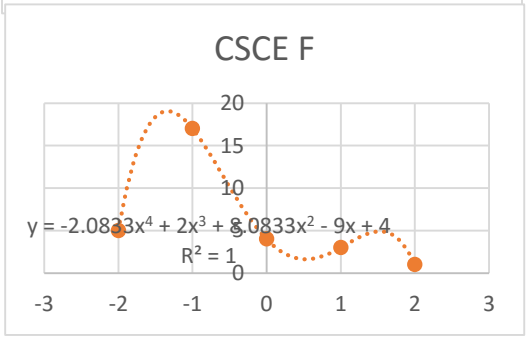


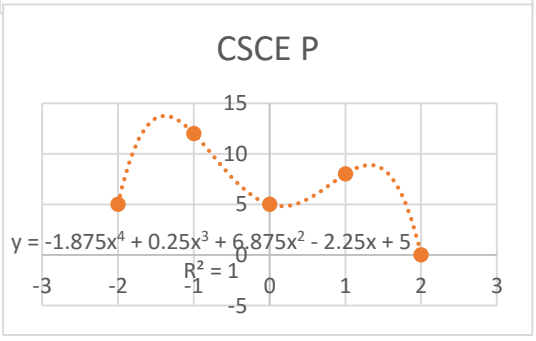

TCMG F
y = -0.3571x² - 4.3x + 9.7143
R² = 0.9525


TCMG P
y = -2.5x⁴ + 2.5x³ + 11x² - 12x + 4
R² = 1


EHRD F
y = -4.0714x² - 0.1x + 17.943
R² = 0.9642


EHRD P
y = -3.1667x⁴ + 1.8333x³ + 14.667x² - 12.333x + 2
R² = 1


CSCE F
y = -2.0833x⁴ + 2x³ + 8.0833x² - 9x + 4
R² = 1


CSCE P
y = -1.875x⁴ + 0.25x³ + 6.875x² - 2.25x + 5
R² = 1