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THE CAPACITY OF ONLINE METHODS TO FACILITATE SOCIAL BONDING, BRAINSTORMING, AND INTEGRATIVE END PRODUCTS.

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Abstract

Group projects are an important part of the educational experience, and many lead to the formation of social bonds. In recent decades online learning environments have become entrenched as part of our educational options. These environments, while having many methods for communication, lack a multisensory experience. This formative exploratory study looked at common communication methods used within online educational environments for frequency and relative efficacy. The method used to obtain data was a survey administered using multiclustered sampling techniques. Data was then averaged within each respective category and then the categories were ranked from high to low. Overall, real-time methods of communication received higher average scores over delayed communication techniques. However, delayed communication was more widely used than real-time methods. In terms of the group process, respondents attributed higher averages to the outcome and lower averages to the social aspects. As a formative exploratory study, there were many limitations that can be addressed through further data analysis, greater cross-referencing, and additional research.

Introduction

This was a formative exploratory study to ascertain if, and to what degree, social bonds can be formed through the completion of a group project administered through an asynchronous online environment. It is generally accepted that life-long friendships are formed within educational settings. While the literature pertaining to inter ethnic, inter generational, and inter gender formation of social bonds are vast, there are few studies pertaining to the strength and resiliency of social bonds formed within an online educational environment. The value and importance of strong social bonds positively contributes to the formation of social networks, which in turn has a positive relationship with career success (Forret & Dougherty, 2004; Saltpeter, 2011). Arguably, the educational environment, more than any other environment, has the ability to facilitate and nurture the formation of social bonds through the diverse array of educational activities, which include opportunities to participate in athletics, social clubs, international travel, and group assignments. Online education has the capacity to support social clubs and group assignments, and depending on the host of the online learning environment there may be opportunities for international travel. A fundamental difference between an online education and traditional on-the-ground education is the lack of face-to-face interaction.

In a broad sense, education can be defined as the process of spreading knowledge from one source to another. The most common forms of education involve the sharing of knowledge from one or more people with one or more people who seek that knowledge. Within western society it is a master or teacher who educates the apprentice or student. The quality of the education is then based upon the success of the student when he or she enters into the workforce. Much of popular media however, has bolstered a limited definition of education as the process of imparting specific information to a pupil who seeks that information. Within this fundamental

tenet are additional outcomes that may or may not have been planned, thought-out or considered. For example one pupil sitting next to another while in a classroom may strike up a conversation that is later forged into a life-long friendship.

Bandura's (1977) Social Learning Theory states we learn by observing others and having our behaviors positively or negatively reinforced. In the classroom environment the primary lesson is from the intended information imparted by the instructor, and the secondary lesson is what we learn when we hear the instructor's choice of words, his or her vocal tones and speech patterns, and when we observe his or her facial expressions and body language. This secondary form of education can come from the instructor or from peers engaged in the same group project. Mehrabian's communication studies showed that vocal tone along with body language have significant contributions within the communication process (Mehrabian, 1971). Within this totality of the educational experience all of the elements of communication help to determine social bonds. Body language, tone of voice, and speech patterns are often used at a conscious or unconscious level to assess deception, sincerity, and vulnerability (e.g., Goman, 2008). In essence, we give meaning from our situational experiences through the learning process called Constructivism (Merriam & Caffarella, 1999). Piaget held that there are two forms of constructivism: personal and social. In the formation of social bonds, social constructivism which is based on the notion that knowledge develops through conversations, activities, and the sharing of problems or tasks (Merriam & Caffarella) are events communicated are then modeled and reinforced, thus leading to social bonding.

Within recent years there has been a significant increase in the number of students taking one or more asynchronous courses online (Allen & Seaman, 2010). Currently, there is a dearth of research supporting the belief that there is no significant difference in the quality of education

delivered as part of an on-the-ground or online educational modality. Meyer (2002) suggests that some research concludes that students who have taken online courses receive higher grades than do students attending on-the-ground classes. However, this may be explained by the age and developmental stage of the student seeking an online education. A significant drawback to the research is that online education is only one-dimensional and based on text—mediated through a computer. As noted, the learning process is multidimensional; Barab, Thomas, and Merrill (2001) express concern for the loss of the human or social dimension within the online learning process because of this loss of a multisensory experience. To date little has been published with regard to the social experience of online education (Vallee, 2007) as it pertains to the formation of social bonds.

The lack of research related to the formation and retention of social bonds within an online environment may be a result of the population segment drawn to the online educational environment. Diaz (2000) and Gibson & Graff (1992), agree that online students are usually older, have higher grade point averages, and accomplish more college credit hours as well as degree programs. Szulc (1999) contends that the literature documented from case studies of dissertations exemplifies the differences between online and traditional on-ground students. Older students enrolled in online education bring with them years of professional work experience and lessons learned from raising a family. These experiences often result in higher levels of organization, dedication, and sense of responsibility. Another factor rarely discussed with the older student is that they are no longer exploring their boundaries. Younger students transitioning from home to being independent young adults often become distracted from their studies as they explore their new freedoms.

Method

This study utilized non-probability cluster sampling for the dissemination of self-report surveys designed to determine the relative effectiveness of current online tools used to promote interpersonal communication and facilitate a positive experiential experience among current and former students who were assigned a group project within an asynchronous online educational environment. Cluster recipients of the survey were based on two popular pedestrian-friendly locations within the Southern California counties of Los Angeles, Orange, Riverside, and San Diego. The respective locations included the boardwalk in Venice Beach, 4th and Promenade in Santa Monica; Balboa Island in New Port Beach, down town Laguna Beach; El Paseo Drive in Palm Desert, ‘the strip’ in Palm Springs; the Gas Lamp District in San Diego, and finally the ‘main drag’ in Pacific Beach.

Each Saturday for eight consecutive weeks the researcher went to each respective location at approximately 10:00am and randomly approached individuals inquiring about their familiarity with online education. If a person has taken, or is currently enrolled in, an asynchronous online course or program he or she was asked to complete a brief 17-question survey. The researcher remained at each respective site until 2:00pm, or when 20 viable surveys had been completed. A total of 123 surveys were retrieved.

The survey was administered via pen and paper to randomly approached individuals on the street who were either enrolled in an online class or had completed an online class that had a group project assigned. The survey consisted of 17 items along with open-ended comment sections. The first three questions were based on best response categories. They asked questions pertaining to age, gender, and proficiency in reading, writing, and speaking English. The remaining questions were based on a five-point Likart scale with the response categories of: 5-

Excellent, 4-Good, 3-Average, 2-Below Average, and 1-Terrible.

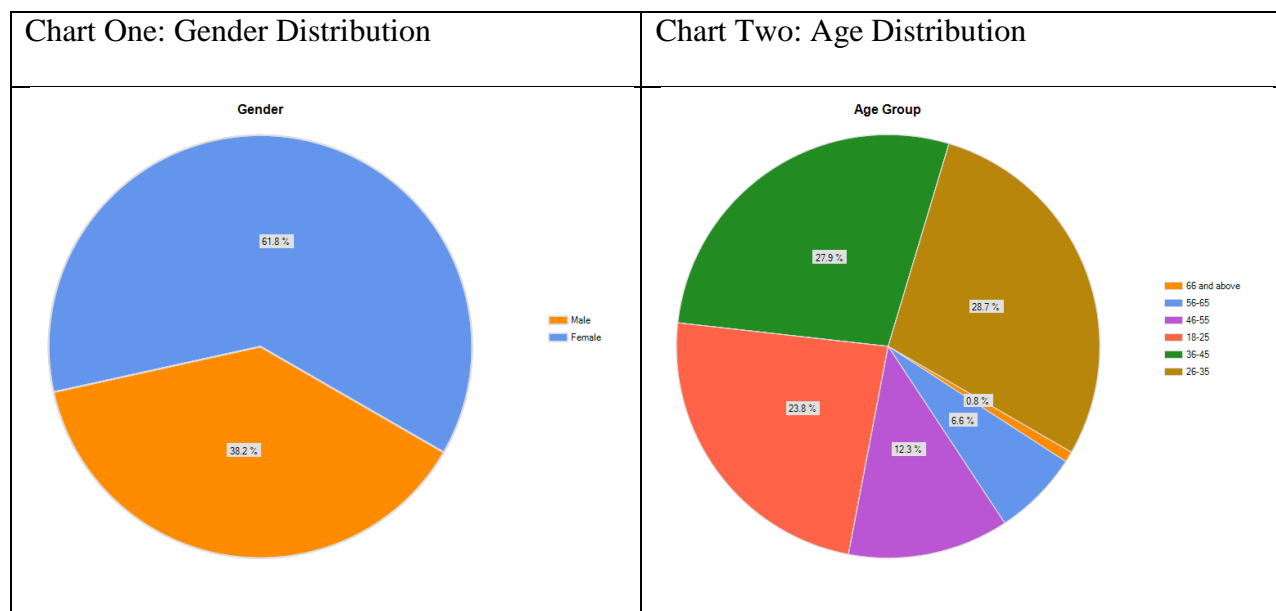
The first category of analysis looked at the most common forms of online asynchronous communication methods. These methods included: Delayed Discussion Threads; Delayed Email; Real-Time Instant Messaging; Real-Time Video Chat; Delayed Video Chat; Real-Time Telephone; Delayed Telephone Voice Mail; and Real-Time Person-to-Person. Respondents were asked to rank each of the communication methods according to the above five-point Likart scale. Responses were then averaged and then ranked from high to low.

A second level of analysis looked at different experiential levels common within a group project. The response categories in this analysis were: Formation of Social Bonds; Ability to Brainstorm; Identification of Creative Solutions; and Completion of A High-Quality End-Product. Again, each of the response categories was assessed using the above five-point Likart scale, and ranked from high to low.

Results

Respondent Demographics

Of the 123 surveys obtained, the majority of respondents (61.8%) were female (see Chart One). The most predominant ages ranged from 25 to 45; 28.7% were between the ages of 26-35 and 27.9% were between the ages of 36-45. The least represented age group was age 66 and above which accounted for only 0.8% of the total sample population. This group was followed by the age group of 56-56 accounting for only 6.6% of the total sample population (see Chart Two).



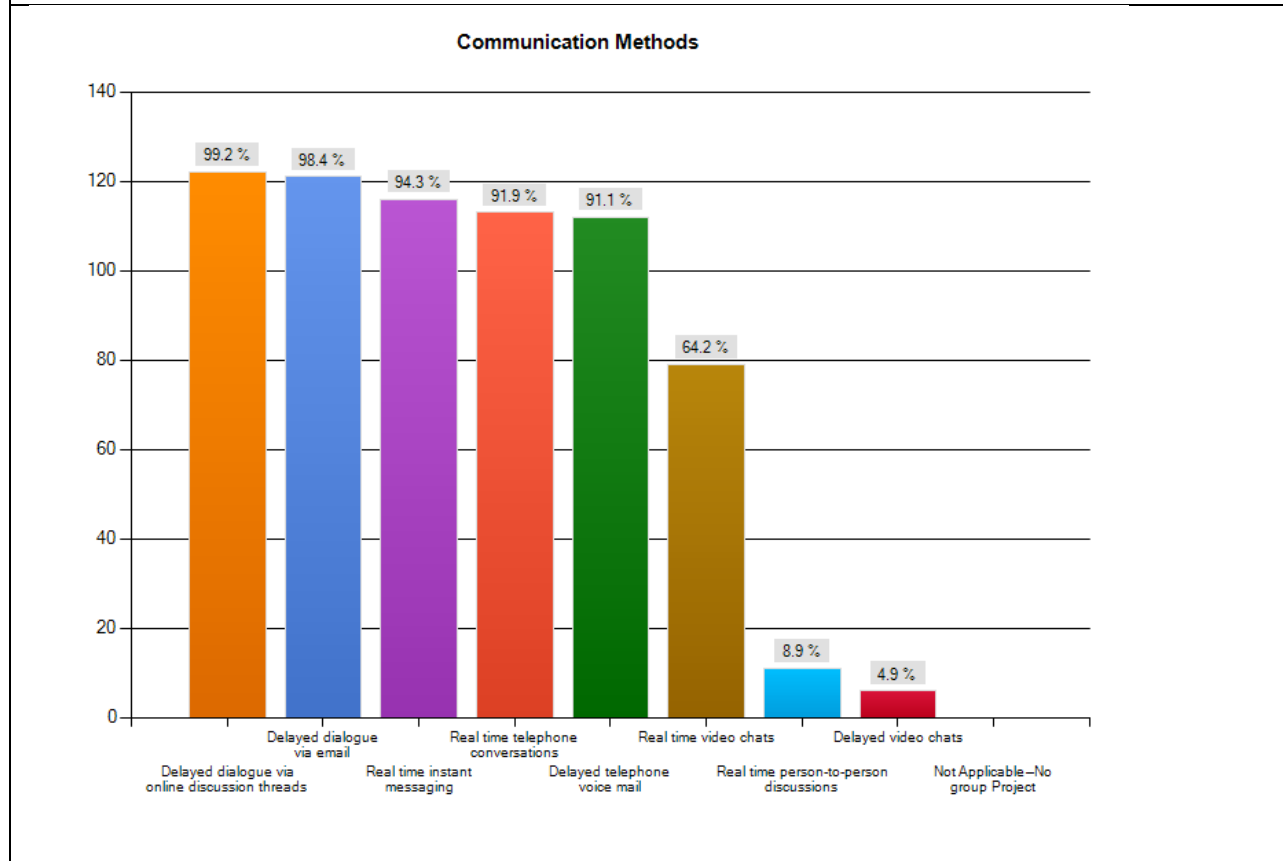
All respondents indicated that they are proficient in reading, writing, and speaking the English language, and 56.1 % of the respondents indicated that they are in, or have completed, an online degree program. The remaining 43.9% indicated that they had only taken one or more courses online.

Results

Communication

Communication is an important part in the formation of social bonds. Within an asynchronous online educational environment communication methods are diverse. The most common forms of online communication include delayed dialogue through discussion threads, email, voice mail and video mail. Other forms of communication include real-time instant messaging, video chatting, telephone, and in some occasions face to face interaction. Of the different online communication methods available, recipients identified delayed dialogue via online discussion threads and email as the primary method of communication followed by instant messaging (see Chart Three).

Chart Three: Methods of Communication



From this question, respondents were asked to score the effectiveness of each communication method using the five-point Likart scale mentioned above. Males 18-25 and 26-35 identified real-time video chats to be the most effective method to communication with the respective average scores of 4.58 and 4.18 out of a possible five-point scale. Likewise, with the respective average scores of 2.60 and 2.71, these age groups identified delayed telephone voice mail as being the least effective form of communication. The age group 36-45 attributed an average a score of 4.50 for real-time person-to-person discussions thereby making this category the most effective communication method within this age group. Likewise, the average score for the age group 36-45 was 2.42 for delayed telephone voicemail; thus, making this form of communication the least effective for this age group.

Males 46-55 identified real-time instant messaging along with real-time video chats, real-time telephone conversations, and real time person-to-person discussions to be the most effective forms of communication with average scores of 5.00 for each category. Males in this age group along with the age group of 56-65 identified real-time video chats as being the most effective forms of communication, and delayed telephone voicemail as the least effective form of communication; these average scores were 4.00 and 1.00 respectively. It should be noted that there were only two males within the sample pools for each of the age ranges of 46-55 and 56-65.

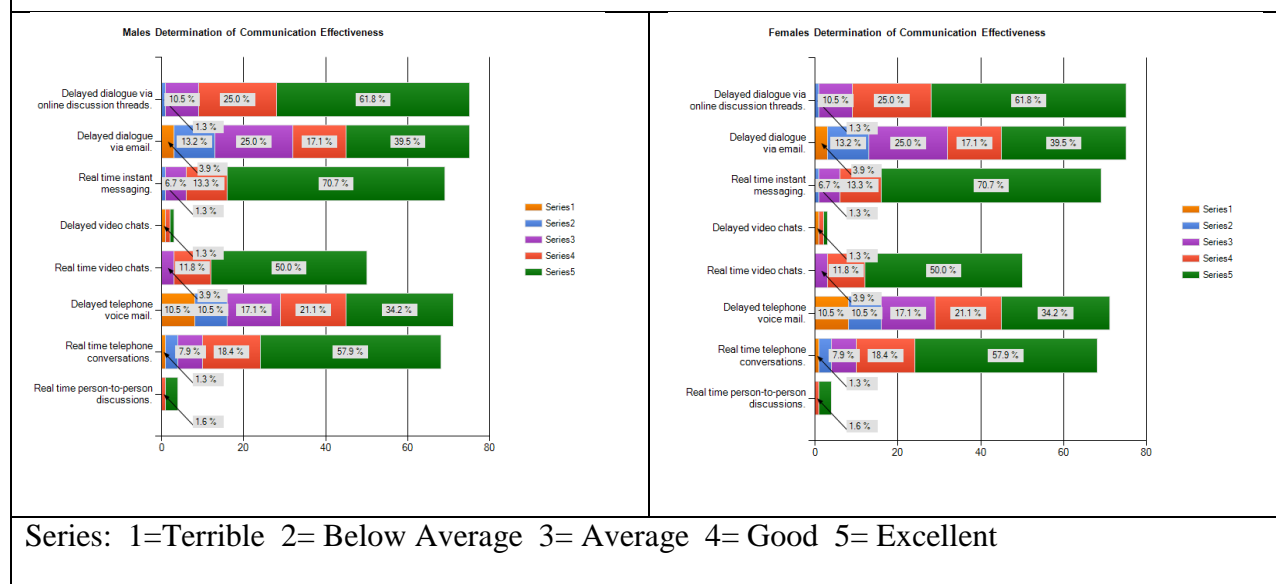
With average scores of 4.93, 4.80, and 4.80 on a five-point Likart scale, females 18-25, 36-45, and 46-55 showed a clear preference for real-time instant messaging as their most effective communication method. Likewise, females ages 26 to 35 identified real-time video chats as the most effective form of communication with an average score of 4.40 on a five-point scale. Interestingly, females 18 to 25 only gave delayed video chats an average score of 1.00 making it the least effective form of communication within this age group. Females ages 55 to 65 indicated that the most effective forms of communication were real time video chats and assigned an average score of 5.00 out of a possible five on the Likart scale.

Females ages 26-35, 46-55, and 55-60 indicated that delayed telephone voicemail was the least effective form of communication yielding the respective scores of 3.11, 3.25, and 4.33 on a five point Likart scale. The only age group that deviated from these results was females' ages 36-45 who awarded the average low of 3.90 to delayed dialogue via email as the least effective form of communication.

Overall females indicated that real time person-to-person discussions were the most effective form of communication with an average score of 4.75. This was followed by an average

score of 4.70 attributed to real-time video chats. Males concurred with the real-time video chat as being the most effective form of communication. Males and females also concurred that the least effective form of communication was delayed telephone voice mail. Females gave an average score of 3.62 and males gave an average score of 2.58 on a five-point scale. See Chart Four A & B for percentages of each level in the ranking and for each category.

Chart Four A & B: Male and Female Evaluation of Communication Effectiveness



Females, more than males, were inclined to use comment areas to provide clarity to their responses. Among the most noted comments was a failure on the part of the recipient to listen to a voice mail or to respond to any of the delayed methods of communication. Several respondents noted a belief that group members respond on the delayed dialogue threads only because they know the instructor monitors the threads.

Personal Experience

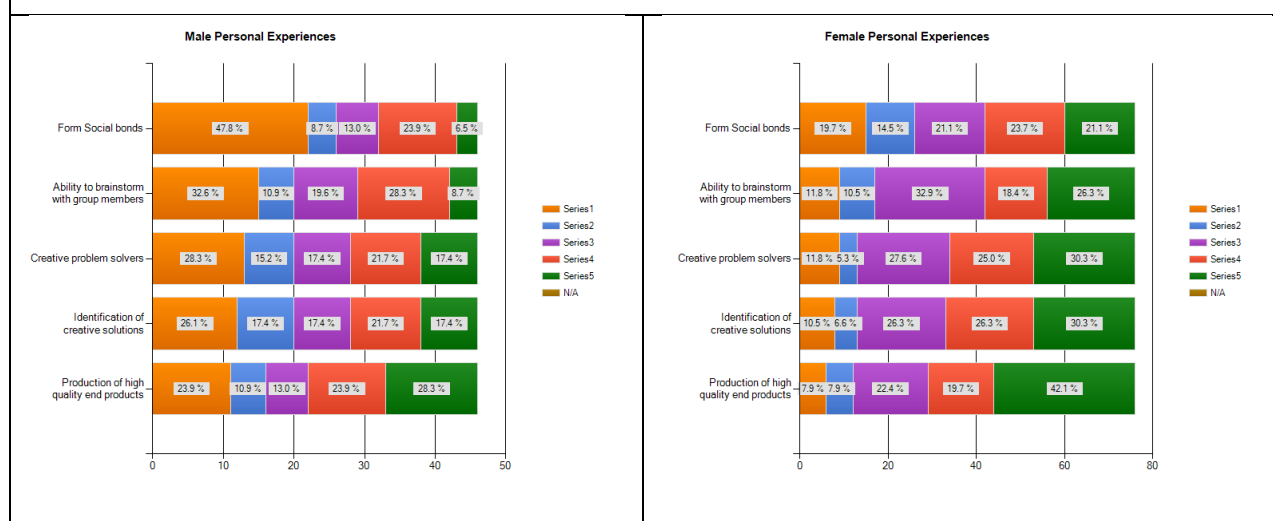
The next category of analysis was recipient's personal experience. One's personal experience often defines or serves as a starting point or solidification factor for long lasting social bonds. In this section we asked respondents to rank personal experiences with select aspects of a group project. Each aspect, such as forming social bonds, brainstorming, identifying creative solutions,

and producing a quality end product all affect one’s experience. With the exception of males in the age range of 36-45, all males attributed the production of high quality end products with the highest averages. Average scores awarded by females within the age ranges of 18-25, 26-35 36-45, and 55-65 also reflected a favorable disposition to the production of high quality end products.

Males 36-45 produced an average of 3.50 for the category of creative problem solving as well as the category of identifying creative solutions. Females’ ages 46-55 also gave the highest average to the identification creative solutions. However, within both groups the respective scores were only 3.50 and 3.46 on a five-point scale.

Overall males and females ranked the production of high-quality end products as being the greatest in their personal experiences with the respective scores of scores of 3.2 and 3.8 on a five-point scale. Likewise, males and females ranked the formation of social bonds with the lowest averages with aggregate scores of 2.33 and 3.12 respectively. See Chart Five A & B for percentages of each level in the ranking and for each category.

Chart Five A & B:



1=Terrible 2= Below Average 3= Average 4= Good 5= Excellent

Comments within this section were fairly split between males and females. Some of the comments include, “I was there for an education not to make friends,” “Me and one other person did all of the work,” “more participation from other group members would have made brainstorming better and given us more creativity”.

Discussion

The perceived efficacy of the different communication modes showed that respondents’ found real time person-to-person followed by real time video chats to be the most effective modes of communication. These modes were followed by delayed dialogue via discussion threads and then real time telephone conversations. Given Mehrabian’s communication studies showing the importance of accompanying vocal tone with body language and facial expression with the actual word, it would make sense that recipients would identify face-to-face conversations via direct person-to-person contact, or person-to-person through computer mediated venues, as more effective than text-based-only modes of communication. Interestingly, discussion threads ranked higher than voice-to-voice communication (aka telephone and voice mail) in overall efficacy. Voice to voice discussions, more than text only, allow for vocal tone to be detected thus allowing for more of the intended message to be conveyed. This anomaly may be explained by recipient comments pertaining the monitoring of discussion boards by the instructor. There were numerous comments expressing dissatisfaction to email and voicemail response by fellow group members. With real time interaction via text messaging, video chats, telephone calls, and person-to-person communication, conclusion, resolution, and action plans can all occur within a single dialogue session. With email, a response may come right away or could come in days, or not at all. With the telephone, caller identification affords the receiver the option of not taking the call

without justification; thus, forcing the sender to leave a voice mail that may or may not be returned in a timely fashion.

The experiential aspects of a group project showed average scores given to the production of high quality end products with the lowest averages attributed to the formation of social bonds. This is interesting in so far as it is the end that seems to matter more than the journey or process. The majority of comments pertaining to this question indicated that the formation of friends was not high on their priority list. This is evidenced by numerous comments such as: "I wasn't in the class to make friends." The recipients who stated that they did form a significant bond were also the recipients who were the most negative with their assessment of the communication modalities of email, voicemail, instant messaging, and discussion threads. This suggests that recipients who had found an ally within a group project in which the group as a whole failed to coalesce formed stronger social bonds than did groups in which all members participated more or less equally. However, this supposition will need to be tested and verified with further research and data analysis.

The results, in combination with the comments, of the experiential aspects seem to indicate a compartmentalization of the education process (i.e. I learn here, I make friends here, I socialize here). Clearly, averaging and ranking of responses contributed to the compartmentalization, but the comments were irrespective of the ranking. Further research into possible trends of compartmentalization within society is needed.

Finally, there are many ways to organize and analyze survey data. In this formative exploratory study relative intensity followed by a hierarchical ranking system was used. This method is ideal for identifying strengths and weaknesses along with areas for greater attention. It does not however lend itself to measurements of overall efficacy. Consider that the average score

of 3.90 was given by females' ages 36-45 for delayed dialogue via email. An average score of 3.90 is well about average, but because of the ranking system used for analysis—delayed dialogue via email appeared as the least effective method of communication from females aged 36-45. There were many instances of average scores falling below a 3.5 but still appearing within the first two levels of the ranking. Clearly these areas need to be researched to identify ways for improvement. Likewise, several instances occurred where the average score was above 3.5, but fell in the bottom of the ranking. Hence, greater data analysis and cross-referencing is needed before any firm conclusions can be deduced.

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