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ABSTRACT

In fall 1984, a program was implemented at Daytona Beach Community College (Florida) with the dual purpose of integrating subject material between courses and establishing a close community of learners to cooperate in the mastery of subject matter. In the fall semester, participating students enroll in a block of three courses; English I, Humanities I, and Psychology of Adjustment. For the winter term, the block courses are English II, Humanities II, and General Psychology. The courses are all team taught by the instructors from each discipline, and a central theme is used each semester around which academic inquiry and discussion is centered. As a dialogic instrument and a personality measure, the Myers-Briggs Type Inventory (MBTI) is administered in the fall to help students assess their own strengths and weaknesses, as well as to help faculty evaluate and modify their teaching styles. The test classifies students and teachers as Sensing versus Intuitive, and Feeling versus Thinking. A study using the MBTI results over a 6-year period was conducted to determine whether different personality types among students and teachers led to different academic success rates. Personality type did not seem to correlate significantly with retention rates or student grades. In general, though, the program format produced higher overall student successes (only 23% not succeeding) and has created a collegial interactive atmosphere which has been a very important and valued part of the program for both teachers and students. The paper includes a detailed literature review of the different characteristics associated with each personality type. (PAA)

Quanta, a learning community at Daytona Beach Community College and the use of the Myers-Briggs Type Inventory

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EDH-6053 Community College Education
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At Daytona Beach Community College, a learning community approach to education was first developed in 1984. According to Cindy Avens, the program developers first visited La Guardia Community College to study their cluster concept for education. They next visited Stony Brook New York University to examine their faculty mentor learner community approach. Cindy explained, that Stony Brook used a faculty member, with special leave, as a mentor-student for the learning community. He would attend classes as a student but also would work with the community of students outside of class. Finally, they visited Evergreen State University in Olypia, Washington and decided to model their learning community after the Evergreen system. Named Quanta after Einstein's quantum leap, they started in the Fall of 1984.

Each Fall students have been recruited to participate in the program. As a community of learners, the students are enrolled in a block of three courses that meet for three hours Monday, Wednesday, and Friday. They start with English I, Humanities I, and Psychology of Adjustment in the Fall semester. If they again enroll in the Winter term, they take English II, Humanities II, and General Psychology.

Each semester the block of three classes are team taught by the teachers from each discipline. The emphasis is to integrate the three disciplines and to develop a close community of learners who cooperate in mastering the subject matter.

As a dialogic instrument, they administer the Myers-Briggs Type Inventory (MBTI). It is used as a means for getting students to assess their own strengths and weaknesses as learners. It also helps the faculty to assess their own teaching styles with the goal of providing teaching styles that help students succeed. . is study uses six years of data to examine the effectiveness of Quanta program in terms of students' MBTI preferences.

The Learning Community Approach

As is stressed in the Quanta manual (1990), the two key concepts are integration of subject material and learning community. The approach recognizes and appreciates differences (Rideout & Richardson, 1989). According to Hill (1985), intellectual collegiality and interaction between students and faculty are developed and students become active learners. The integration of disciplines and the interaction of three different instructors also helps to create a sense of vitality for the faculty (Hill, 1985 & Mathews, 1986). Symbolic of the energy that goes into these

programs is the use of a central theme to organize and integrate the subjects. For the Fall of 1990, Quanta has a central theme of 'The Quest' where all three classes "...jointly explore the theme of our inner search for understanding who we are" (Avens, West, & Zelley, 1990, p.6). In the Winter term the theme will be 'the shaping of the modern mind'. Clearly, integrating the three disciplines presents a special challenge to each faculty member but the extra effort actually seems to energize the faculty.

In a 1984 National Institute of Education Report, a warning about higher education's need to stress excellence and a need for active student involvement was given. The report stressed that there was a need to communicate high expectations from all who were involved. According to Mathews, the learning community approach offers a way to deal with those needs (1986) and Quanta reflects that ideal.

Rationale for using a personality inventory

As mentioned, Quanta administers the Myers-Briggs Type Inventory, MBTI, in the fall. With the use of MBTI, students are given a format for thinking about how they relate to learning and the faculty attempt to avoid biases in their own presentation of the material that would interfer with learning. A growing body of research supports

the idea that higher education often fails in providing avenues for effective learning by not considering alternative pedagogical delivery systems. According to O'Brien (1989), seventy-five percent of higher education is left brain in nature. Educators do need to be careful not to over extend their conclusions about the dichotomy between left-right brains but there does seem to be a bias for left brain functions in higher education (Springer, 1987). Auditory learning with the use of lectures is utlized 80% of the time in higher education but only 10% of the students prefer this format. Forty percent of the student prefer the use of visual presentations and fifty percent of the students prefer a haptic learning format where they learn by doing. Individuals who are right brain in orientation are weakest with auditory and strongest with haptic learning. Since right brain students have trouble determining what they know, they often take an attitude 'I must be stupid' (O'Brien, 1989). Sensing individuals often draw the same conclusions. Of course, when a student sorts and classifies differently it should not be assumed that they are unable to learn or that they are dumb. Hilliard (1989) and Keegan, (1984) both stress that differences of style does not equal differences of abilities and that one style is not inherently better than another.

Research also supports the idea that student success is affected by personality types. Student failures, maybe a failure of educational systems ability to read diversity of personalities and how styles affect learning (McCaulley & Natter, 1980, & Myers, 1980). Jensen states that, "...a perfect correlation between personality type and learning style is not possible" (p. 183) and there are many other factors that might affect success in learning. Yet, the use of MBTI can be useful for improving retention (Kalsbeek, 1987). Teachers should also know how to read their own styles and draw strength from that knowledge but they also should be flexible so as to provide growth statements for their students styles. As Jensen states, "instructors must not be asked to change their teaching styles, but they should be shown how to make contact with their students"(p. 192). In all probability, a teacher who does this will change their style, at least at the evaluation level. Effective teachers must have the ability to assess and manage their own preferences so that students can become successful. MBTI offers a management tool for directing student learning by offering balance within the classroom for all styles (Barr & Barr 1989, & Keegan, 1984).

Effective teachers recognize that there are potential biases within delivery systems and they attempt to vary those systems so as not to penalize any style of learner.

Effective teachers also seek to teach students how to become proficient in all modes of learning. When used in a dialogic manner, MBTI helps to provide direction, for both students and teachers, toward a better understanding of how to learn. Essentially, the Quanta faculty want to know how well they have been doing in this respect and how they might improve. This evaluation uses the six year data base of Quanta to see if one personality type did better than another.

Summary of the research

The primary concern for this research study was to see if there was any significant difference between personality types and success rates. Also of importance was the characteristic makeup of personality types over the six years. Finally, the question of whether some personality types preferred the community learning approach was examined.

Each student's MBTI style was matched with the grades he received in each of the courses he took in a given semester. The analysis of success for each semester focused on grades of A, B, C, with D, F, withdrawal and incomplete being lumped together. For each of the sixteen MBTI styles, totals of A, B, C, and D, F, W, I were computed. Then using a chi square measure of variance, these four grade

distinctions were compared with the MBTI components of Sensing (S) vs Intuition (N) and Feeling (F) vs Thinking (T) for each semester, for the first three years, the second three years and then a grand total for all six years. Table one list the results.

Table one

Summary of chi square distribution by semester when there are at least 5 frequencies per cell.

	Myers-Briggs Type Inventory	
year-semester	S vs. N	T vs. F
1985-1	6.971	9.149* T
1985-2	4.983	1.750
1986-1	14.294* S	3.288
1986-2	14.362* S	2.194
1987-1	4.572	4.600
1987-2	----	5.357
Total 1st 3 yr.	18.919* S	2.663
1988-1	1.906	3.622
1988-2	5.945	5.860
1989-1	7.072	11.350* T
1989-2	----	8.836* T
1990-1	13.704* N	7.500
1990-2	8.058* N	15.408* T
Total 2nd 3 yr.	2.259	9.786* T
Grand total	15.247* S	8.587* T

*p< .05.

Interpretation of results

Based on the literature, one might have expected a strong bias favoring Ns. One study of Florida 12th graders found that Ns out performed Ss in all areas at an alph level of .01. Sensing types were more likely to drop out of school, only made up 17% of national merit students, and made up only 41% of Ivy League freshmen. Another study of Pennsylvania High Schools found that 85% of the non academic students were Ss (Myers, 1980). Yet, with the exception of 1990 that was not the case in this study. In fact, Ss did better over the six year period with the first three years showing the biggest advantage to Ss with no advantage during the second three years. The literature also suggest an advantage to Thinking types. Keegan (1984) feels that Western Culture has overemphasized Thinking as the means for making decisions and this bias is reflected in United States culture. Therefore, one might expect that Ts would have done better. They did during the second three years and overall but there was no advantage during the first three years.

The logic for comparing the first three years to the second three years was made because of changes in the curriculum. Biology was a part of the core during the second semester of the first three years but not during the second three years. One might try to expain the Ss advantage in terms of biology

except that it was not taught in the Fall of 1986 when there was an advantage for Ss. This curious contrast between the first and second three years of the program is further confounded by the personality types of the instructors, ENFP, INFP, INTP, and INTP. With all of them being Ns, one might have expected a bias in favor of Ns. Clearly, there are some interestin questions for the Quanta people to examine. By looking back at each semester they may be able to unravel some of this mystery and in the process identify the important factors for effective learning as desc ibed by Pat Cross (1988).

Composition of the classes based on MBTI

Table two give the percentage composition of MBTI types for the six years. There are no major surprises. A third of the students were Ss and two-thirds were Ns which seems to be the general pattern in higher education. Averaged over the six years there was a 62% retention rate from the Fall semester to the Winter Term but there was no one type that seemed to be retained at a significant higher rate than another.

Table Two

MBTI types for the six years with percent for each type returning in the second semester.

	% of total in Fall	% of total in Winter		% of total in the Fall	% of total in the Winter
ISTJ	.054	.060	INFJ	.032	.032
ISTP	.036	.038	INFP	.119	.130
ESTP	.028	.023	ENFP	.159	.153
ESTJ	.061	.072	ENFJ	.063	.072
ISFJ	.047	.047	INTJ	.036	.048
ISFP	.029	.027	INTP	.073	.074
ESFP	.029	.023	ENTP	.127	.119
ESFJ	.048	.049	ENTJ	.058	.068
ST	.179	.193	NF	.373	.387
SF	.153	.146	NT	.294	.309
S	.331	.339	N	.667	.696

Finally, the overall grade distribution remained steady over the six year period with 77% of the grades being at least a C. There were some interesting variations by year that could provide interesting future study. Table Three gives the percentages of grades by semester.

Table Three

Percent grade distribution by semester.

grade	A	B	C	D,F,Withdrawal or I
1985-1	30	30	17	23
1985-2	31	28	20	21
1986-1	22	34	23	22
1986-2	35	29	18	16
1987-1	32	36	7	24
1987-2	32	38	13	16
1988-1	26	28	14	32
1988-2	22	20	21	37
1989-1	19	42	22	17
1989-2	14	36	39	13
1990-1	31	33	15	21
1990-2	27	34	17	23

It should be stressed that each instructor was responsible for awarding the grades for their respective class. During the semester, all the faculty would confer on grades for projects that integrated the three disciplines but individual tests and final grades in each class was defined by each faculty member.

MBTI-all things considered

The general assumption is that the use of the MBTI can provide clues how to better match instructional methods to the personality type of students. It should not be done in a prescriptive fashion but rather in a flexible manner that allows for diversity to succeed. While this study focused on the S-N, and the T-F dimensions of the MBTI, other components could be considered. For example, Extraverts, E, are motivated by action and seek socialbility in the

learning process. Making up about 66% of the population, they learn best by doing (this sample had 57% E's). On the otherhand, Introverts, I, reflect before acting and need clear ideas for action. They look for deep meanings when given time to analyze (McCaulley & Natter, 1980).

The Sensing and Intuitive or SN scale is the most critical scale, as far as, its implications to education. Intuitive types prefer working with symbolic constructs upon which most of education rely. Sensing types, who prefer to use hands-on approach often find themselves lost in the vicarious classroom (Kalsbeek, 1987, & Myers, 1980). Kalsbeek stresses that there will be increased numbers of sensing types coming into college, making it even more important to deal effectively with that type. Here is where the Quanta faculty might make significant contributions to learning theory. If they can isolate what seemed to give the advantage to S's, the techniques could be incorporated into a balanced instructional plan that would not favor either type. In the general population, Ss outnumber the Ns three to one. They use their senses for working with detail and are good at systematically processing information. They tend to be practical, want proof, are competitive, and seek action. Their biggest weakness is a poor perception of symbolic manipulation. They overlook subtle meanings, resist new changes, hold onto old ways, are slow to act

innovatively, cut corners on creating social links, and focus too much on the little picture. Unlike Ss, intuitive types find themselves at home in education because they draw upon their strengths to work with symbolic conceptions that so much of education is based. They develop a strategy for success that incorporates the big picture. They work well with possibilities that go beyond the facts. Yet, they may miss important details, be unfocused, be uncomfortable with routine, or be unrealistic about time needed for tasks (Barr & Barr, 1989, Kalsbeek, 1987, & McCaulley, 1980).

With the Thinking, T, and Feeling, F dimension is found the only area in the MBTI where there is significant difference based on sex. The TF scale focuses on how individuals make decisions. Sixty-five percent of the females prefer to make decisions based on their feelings and sixty percent of the men prefer to use logic (Barr & Barr, 1989 & Rideout & Richardson, 1989). According to the Barrs, Ts want to be treated with fairness and Fs want to be treated agreeably and personally. Feelers derive strength from supporting others. They are emotionally sensitive, expressive, persuasive, descriptive, and communicative. They tend to be aware of how people are affected and rely on subjective evaluations that are value based. Since they rely so much on their feelings, they can become confused, moody, overly sensitive, gullible, and unpredictable. They may provide

too much support, become emotionally overloaded, devote too much energy to tasks, oversimplify, lack preparation, take too long to get ideas across, or may burn out on self-pity. In contrast, Thinkers rely on objective logic for making decisions. They are analytical and logical in dealing with even emergency situations. But they can become too critical, skeptical, insensitive, and judgemental. They may avoid emotional expression, undervalue the emotions of others, appear cold and detached, ask too many questions, or remain overly formal (Barr & Barr, 1989, & McCaulley & Natter 1980).

Finally, there is the JP scale or Judgement and Perception manner in which individuals organize their life and relate to the outside world. Js prefer to live life in a structured fashioned. Long range planning and an ordered approach to accomplish tasks is preferred. They tend to be outcome oriented and see work as separate from play. Perceivers are process oriented and see the process as the same as play. They are flexible and spontaneous. They are curious but tend not to make up their minds until necessary. They may over-commit to a project and work on it till the end. (Barr & Barr, 1989, Jensen, 1987, & McCaulley & Natter, 1980).

Clearly, what works for one type may not work for another. Teachers need to carefully plan how to present materials and

how to get students to develop beyond their style preferences. The challenge is to work at developing a balance. Effective classroom structuring works at a personalized fit at times but also provides encouragement and techniques for developing a student's nonpreferred styles. Classroom activities with discussions, cooperative learning group processes, or oral reports work well for Es and quiet times or lectures work for Is. The use of concrete facts that relate to the here and now or the use of audio-visual materials might help clarify the meaning of concepts for Ss. Activities that stress the theoretical and conceptual need to be balanced with techniques for time management for the Ns. Ns also can be used in cooperative formats to explain the conceptual materials to Ss. Relating new materials to the human aspect, recognizing their performances, or using value clarification exercises all effectively motivate Fs. But the teacher has to encourage Fs to develop their logical side by stressing the logical consequences of actions. Ts need activities that apply their analytical skills. Clarifying cause-and-effect relationships motivate them but they in turn need to learn how to get in touch with their feelings. Js like structure, order, and closure but they need to learn how to loosen up. Finally, Ps need flexibility in the classroom but they need to develop order as a means of avoiding procrastination (Jensen, 1987 & McCaulley & Natter, 1980).

Conclusion

The use of the Myers-Briggs Type Indicator by the Quanta program has provided some important questions about how student might react to learning. There are some curious differences between the first three years of the program that seemed to favor Ss over Ns and the second three years that seem to favor Ts over Fs. The next step will be to develop a computer program that will allow them to enter quickly the results at the end of the semester to determine if there are any biases that favor one style over another. While it is fresh in their minds, the Quanta faculty would be able to look back on the semester and identify causes for biases when found.

There did not seem to be any particular MBTI type that dropped out of the program more than any other type. There were some specific patterns of grade differences from one semester to another that will be interesting to monitor in the future but with only 23 % of the students not succeeding in the program, Quanta is working well. The advantage of the program can also be measured in terms of the vitality for the faculty. The collegial interaction has been a very important and valued part of the program.

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