

Student performance is linked to connecting effectively with teachers

Student
performance

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Abstract

Purpose – The purpose of this paper is to examine student performance on both criterion- and norm-referenced measures, linked with teacher and student communication orientations.

Design/methodology/approach – The study used a pre-post design. During the pre-study phase, teachers underwent three days of intensive training in the Process Education Model®. In total, 21 middle and high school teachers at an independent school were the subject group. Each teacher identified ten students, five of whom they classified as “easy to communicate with” and five others whom they classified as “difficult to communicate with.” Approximately, 200 students participated in the study. Teachers and students provided communication preferences via the Kahler Personality Pattern Inventory® (1996). Performance data were gleaned from student grade point averages (GPAs) and grade-appropriate versions of ACT instruments.

Findings – The PPI reveals, in part, perceptual preferences in an assessing matrix. Intrinsic and extrinsic orientations were one set of distinctions. Most (more than 85 percent) of the teachers had intrinsic orientations, compared with 63 percent of the “easy” students and 47 percent of the “difficult” students. Both GPA and ACT comparisons were significantly different ($p < 0.001$) on both pre- and post-measures, with the easy students outstripping their difficult counterparts. No significant differences were observed on the ACT Aspire, taken by students in grades 6–9.

Research limitations/implications – The study was conducted at one site.

Practical implications – Student performance appears to be linked with connecting with teachers’ preferred delivery and communication styles. The more like their teachers the students are, the better their performance. Reinforcing new knowledge and skills was recognized as an important component of training.

Originality/value – If connecting better with students is tied with performance, teachers who learn how to shift their delivery methods may foster better outcomes. Also, attention should be paid on how distress may impact teacher performance, especially as they interact with students whose communication preferences may differ from theirs.

Keywords Motivation, Teacher effectiveness, Student performance, Communication preferences, Instructional delivery, Training reinforcement

Paper type Research paper

Introduction

The issues of how to prepare students to compete in a global economy are primary in education today. The “Common Core” is one possible approach for education in the USA. It is the adopted curriculum in 42 states. It is the closest the USA has come to a national curriculum, unlike most countries the world, where there is a national educational policy. However, issues regarding how to measure the results have spawned some crucial questions (Altman, 2014; Riley, 2018). While the “jury is still out” on the Common Core, the focus on delivering a meaningful curriculum remains.



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Traditional approaches to instructional delivery may no longer be effective:

OK! Today, you are going to be working by yourselves. If you have any questions, raise your hands, and I will come to you.

This scenario has been seen in classrooms all over the USA. It demands that students conform to the way that the teacher wants them to behave. However, not every student is comfortable with static or limited delivery methods or constraining rules. We have learned that students have differing learning styles and ways of processing information (Gregorc, 1982; Kolb, 1984; McCarthy, 1980). Preference of intake modes (auditory, visual, and kinesthetic) (Barbe and Swassing, 1979) and access to different abilities (analytical, creative, and practical) (Sternberg *et al.*, 1999) are other considerations for looking at student learning. Also, students may be more adept with some learning styles or focal areas, or “intelligences” (Gardner, 1983).

Classroom structure and limited instructional delivery may result in problems in dealing with students who bring home-life baggage to school. They see their “success” as their ability to “shut up and listen to the teacher” (Knaus, 2013, p. 16). Moreover, students who have strong extrinsic orientations – more apt to respond to external rather than internal activities – demonstrate low priority for grades and school programs, in favor of action and fun. Their need for socialization during the school day may explain why they prize relationships with others like themselves (Bradley, 2008). The key to change may be for teachers to adapt to student learning preferences to connect with them more effectively.

The problem

If teachers are being held accountable for student performance, they may wrestle with how to connect with students effectively and facilitate meeting objectives and reaching goals. Those who are more difficult to connect with (for whatever reasons) present a challenge. Are they not up to the task? Are they lazy? Apathetic?

Teachers will try to connect and help. When their efforts are stymied, they become frustrated. Their typical methods are to structure instruction in logical ways, focus on what is important for students to learn, and/or nurture the individuals (Gilbert, 2014).

Those students who have different learning preferences are those whom teachers classify as “difficult” (Gilbert, 2011, 2014). Their perceptions and motivation are more extrinsic. They prefer an active environment and may prefer a more kinesthetic instructional approach.

Herein lies the problem. Teachers are predominantly intrinsic in their orientation (Bailey, 1998; Cicinelli, 2013; Gilbert, 2011, 2014) and tend to structure their classrooms and delivery methods accordingly. The “difficult” students may be “OK” with that environment [...] but only for a time.

Learning is enhanced when teacher–student relationships are strong (Saul, 2015). Relationship building is a crucial and integral part of how teachers can respond to students effectively. To do so, teachers must understand learning and communication preferences.

Differentiating preferences

How are people different?

Humans are complex creatures. It is sometimes difficult to discern why they behave as they do. Their patterns of interaction are, in large part, attributable to their personalities. People have been characterized as thinkers, feelers, intuiters, and sensors (Jung, 1971). The diversity of people can complicate interpersonal relationships, unless the distinctions are understood.

Individual differences can be defined as characteristic patterns of thinking, feeling and behaving (APA, 2015; Ware, 1983). People display these unique patterns fairly consistently throughout their lives (Cherry, 2015). In order to communicate effectively, we must

understand how others prefer to communicate, especially if their preferences are different from ours, and adapt our messages accordingly.

Personality models abound. The most typical ones for organizational consumption either identify traits or types or both. Some of the most familiar are the Myers–Briggs Type Indicator (Briggs *et al.*, 1943–1998), the Five Factor Model (Costa and McCrae, 1992), and Keirsey Temperament Sorter (Keirsey, 1978). There are many others.

Aspects of personality can indicate preferences for interaction. Favorite world (extraversion or introversion), information (sensing or intuition), decisions (thinking or feeling), and structure (judging or perceiving) are one set of components (Myers, 1962). Assertiveness and responsiveness (Bolton and Bolton, 1996) are another set; these yield personality types described as analytical, driver, amiable, and expressive. Other typologies enumerate characteristics using different language but with similar foundational components.

Moving beyond typology, Goodman (2015) suggested that teaching is relational, as well as academic. He suggested we review Vygotsky's notion that language is central to the relational aspects of learning.

For the purpose of this study, the Process Education Model® (PEM) interpreted from the Personality Pattern Inventory® (PPI) (Kahler, 1996) was used. The bases of the PPI come from transactional analysis and Kahler's (1973) work on miniscripts and has been validated and shown to be reliable (Ampaw *et al.*, 2013; Kahler, n.d.; Stansbury, 1990).

The PEM describes how to connect and motivate individuals. It identifies ways people view the world, and take in and give out information. Specific perceptions explain six ways to process information:

- (1) Those with a base of thinker prefer to use thoughts. Their strengths are described as logical, responsible, and organized.
- (2) Those with a base of persister prefer to use beliefs. Their strengths are described as conscientious, dedicated, and observant.
- (3) Those with a base of harmonizer prefer to use feelings. Their strengths are described as compassionate, sensitive, and warm.
- (4) Those with a base of imaginer prefer to use inactions (quiet reflections). Their strengths are described as imaginative, reflective, and calm.
- (5) Those with a base of rebel prefer reactions (likes and dislikes). Their strengths are described as spontaneous, creative, and playful.
- (6) Those with a base of promoter prefer to use actions. Their strengths are described as adaptable, persuasive, and charming.

Project design

The study used a pre-post design to determine if the PEM made a difference in student performance. During the pre-study phase, teachers underwent three days of intensive training in the PEM. In total, 21 middle and high school teachers at an independent school in South-central USA were the subject group. Each teacher identified ten students, five of whom they classified as "easy to communicate with" (easy) and five others whom they classified as "difficult to communicate with" (difficult) (The criteria for classification were left to the teachers. "Easy" students were typically compliant with teacher requests and appropriately responsive to instructional delivery. "Difficult" students were more active in the classroom environment, more playful initially with their responses, and decidedly more kinesthetic and tactile in their learning delivery preferences).

Approximately, 200 students participated in the study. Teachers and students provided communication preferences via the Kahler PPI (cf. Gilbert and Donlan, 2016).

Performance data were gleaned from student grade point averages (GPAs) from prior and current years and grade-appropriate versions of ACT (2018) instruments. High school students (grades 9–12) took the pre-ACT or ACT test, reporting one overall score; students in grades 6–8 took the ACT Aspire, which reported individual scores in English, mathematics, science, reading, and writing.

The grade levels were chosen because the PPI has only been validated to age 11 and older. The PPI results provided measurements for base, strongest perceptions, and phase, current motivation, a non-cognitive factor that influences performance (Madni *et al.*, 2015). “It is important to develop positive teacher–student relationships during this time” (middle and high school) (Gallagher, 2013).

The perceptual results demonstrate how an individual “sees” the world – either through thoughts, opinions, feelings, inactions (reflections), reactions (like and dislikes), or actions. Motivational results indicate what an individual needs to be “OK” or positive in interacting with others – either through recognition for work, time structure, conviction, acceptance of self, sensory, solitude (playful) contact, or incidence (quick payoffs from activities).

Figure 1 arrays a matrix of where the different types fit within four quadrants, with internal–external and involved–withdrawn axes. Also indicated are the environmental preferences depicting in what setting each type prefers to work and interact. Notably almost 90 percent of the base designation of the teachers were in the internal portion of the matrix, indicating an intrinsic orientation. More than 50 percent of the difficult students were in the involved and external quadrant of the matrix, indicating an extrinsic orientation.

Comparisons of performances were examined using a *t*-test. Significance of differences was set at $p < 0.05$.

Results

Demographics

The results of the PPIs allowed comparisons of the study sample teachers with a larger educator sample ($n=1,842$), collected by the author for the period, 1994–2016. The perceptual orientations were comparable – 86 percent intrinsic for the study group vs 91 percent for the larger sample. The main difference between the groups was the study group was substantially (57 percent) belief-oriented. This was not surprising since the school was faith-based (see Figure 2).

The motivation analysis was relatively similar between both groups with recognition of person, recognition for work, sensory, time structure, and conviction predominating.

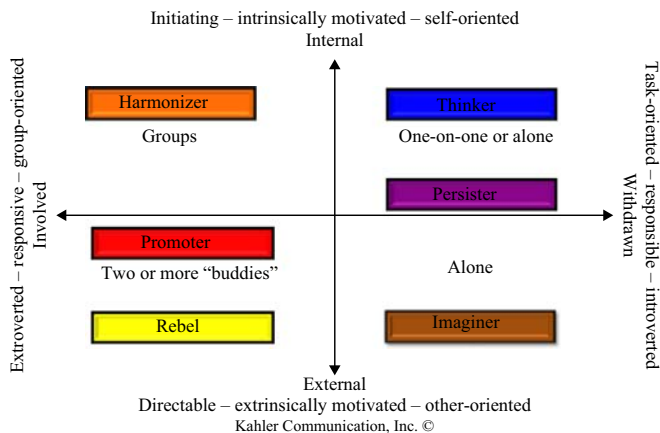


Figure 1.
Assessing matrix

The totals were 86 percent for both groups, with some minor variations when examining the individual needs (see Figure 3).

When the student data were analyzed, the demographics became more interesting. The easy group was 63 percent intrinsically oriented, as compared with 47 percent for the difficult. Most importantly was that the difficult group was almost one-half oriented toward seeing the world through reactions (likes and dislikes), with teachers having no propensity with that perception. The easy group showed 27 percent in the same area. What this means is that teachers were highly unlikely to provide a fun environment, while many of the difficult students would prefer lively and upbeat classrooms (see Figure 4).

The motivation comparison was equally intriguing. In total, 42 percent of the difficult students were motivated primarily by (playful) contact, as were 23 percent of their easy counterparts. Only 5 percent of the teachers had similar motivation (see Figure 5).

Positive motivation allows individuals to move to other communication styles and interact easily. Lack of primary motivation can lead to predictable distress patterns. In this particular case, the students would invite teachers to think for them by offering “Huh?” or “I don’t get it” to instructional prompts. These initial patterns could devolve into more serious distress, evidenced by disruptive behavior. This might take the form of interacting inappropriately with others or other attention-getting behavior. The outcome would likely be the same – negative sanctions from the teacher or removal from the classroom. This may be one of the reasons teachers characterized the students as difficult.

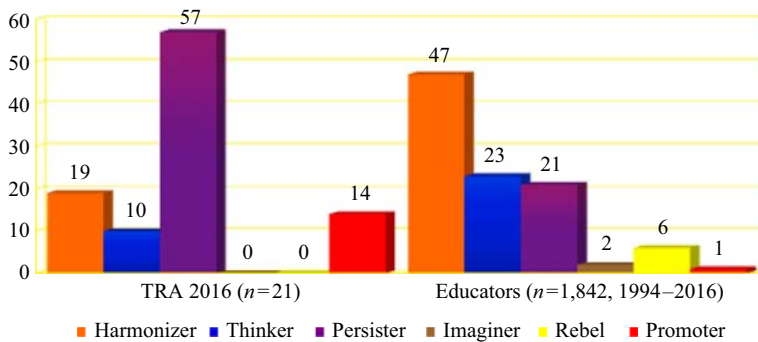


Figure 2. Perceptual orientation comparison

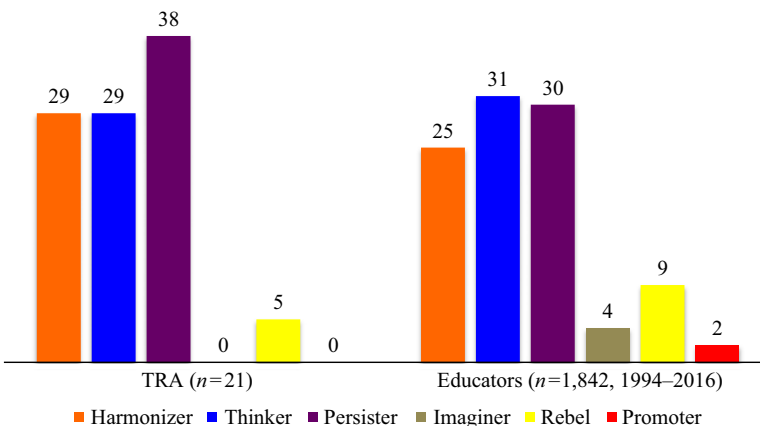


Figure 3. Motivation comparison

Performance

The performance comparisons of the students were divided by grade groups (6–8 and 9–12). This was the way in which the school organized the curriculum – middle school and high school.

The GPAs were taken from the end of 2016, the year before the teachers underwent PEM training, and at the end of 2017. There were significant differences in performance between the easy and the difficult students, as shown in Table I.

The easy students outstripped significantly their difficult counterparts in both grade groups for both years by about 0.4 points. This is not surprising since grades are criterion-referenced, with the teachers establishing the criteria usually. Another interpretation is that grades are students' abilities to meet teacher expectations. Those students more like their teachers tend to perform better by meeting expectations more easily.

Figure 4.
Perceptual orientation
comparison, teachers
vs students

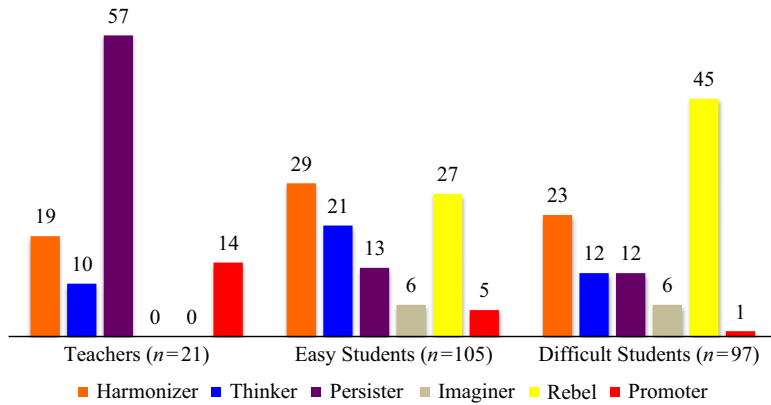


Figure 5.
Motivation
comparison, teachers
vs students

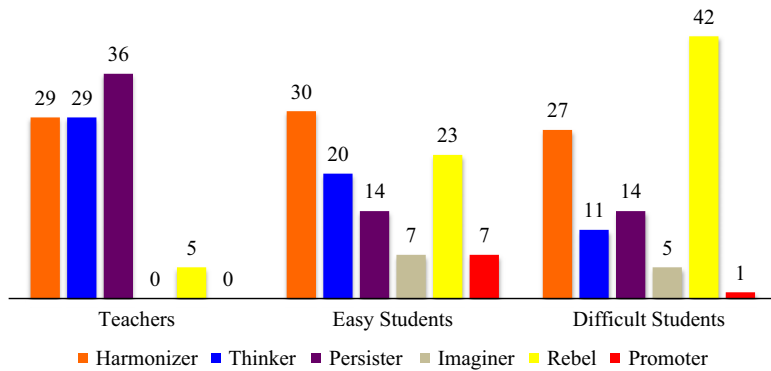


Table I.
GPA comparison

	6–8/E	6–8/D	9–12/E	9–12/D
2016	3.82	3.45	3.64	3.36
2017	3.76	3.34	3.68	3.28

Note: The differences are significant statistically, $p < 0.001$

What was interesting was that the significant differences went away with the ACT Aspire scores in all categories for both years for the middle school students. All of the subscores were within four points of each other (see Table II). The lack of significant differences mirrored what Cicinelli (2013) found, albeit she used the Michigan Educational Assessment Program data and limited her student population to seventh grade students only (the middle year of middle school).

One interpretation: when the teachers were involved in setting performance criteria, significant differences were found when looking at easy and difficult students. When the criteria were set with more objective standards, the groups performed equally.

One might expect similar results with high school students. However, this was not the case in this study. While the easy group performed significantly better on GPA measures, they also performed better on the ACT scores for both years (see Table III). The differences were 0.8 and 1.49 points, respectively. It is also noted that between the two years of data, the average score of the easy group increased by 0.84 points, while the scores of the difficult group declined by 0.15 points.

Apparently, a different set of factors contributed to the continued significant differences of high school students on the standardized tests, as compared with middle school students, who showed even performance between the grade groups.

The significant differences in GPA seem to fall in concert with the “assignment” the teachers made of easy and difficult students. The easy students perceived the world similarly with their teachers; they were more intrinsic in their orientations. The difficult students perceived the world less similarly; they were more extrinsic in their orientations. Teachers showed little orientation to external perceptions.

Possible explanations

One model that addressed personality components is the Five Factor Model (cf. Goldberg, 1993). The model identifies personality traits in individuals: conscientiousness, agreeableness, neuroticism, openness, and extraversion.

Conscientiousness and agreeableness (intrinsic qualities) are most highly related to GPA (Komarraju *et al.*, 2011). Conscientiousness correlated with grades most consistently; obversely, extraversion (an extrinsic characteristic) showed negative correlation with grades (Attia, 2013).

Conscientiousness was the most prevalent predictor of student performance on the Texas Assessment of Knowledge and Skills, a standardized instrument akin to the ACT (Garcia *et al.*, 2011). This may help to explain why the significant differences remained in this study.

Teachers tend to rate students similar to themselves more favorably than those who were dissimilar (Lamphere, 1985; Ruud, 1983; Wallin, 1993). If grades can be interpreted as

Table II.
Aspire comparison, grades 6–8

	Eng/E	Eng/D	Mat/E	Mat/D	Sci/E	Sci/D	Rea/E	Rea/D	Wri/E	Wri/D
2016	431	430	424	423	426	424	422	420	425	423
2017	433	430	428	425	429	427	424	423	428	427

Table III.
ACT comparison, grades 9–12

	10–12 Easy	10–12 Difficult
2016	22.48	21.68
2017	23.32	21.83

student performance aligned with teacher expectations, it should not be a surprise that students dissimilar to teachers do not meet classroom benchmarks as readily as those who are more similar to their teachers. If the decision makers and stakeholders of instructional programs want different results, they will have to provide meaningful incentives for change (cf. Gilbert, 2012).

It is important to note that teachers who have created positive relationships with students are more likely to have above-average effects on student achievement (Hattie, 2008). Those relationships are easier to form with students whose learning and communication preferences match their teachers more closely.

Teacher feedback

After their initial three-day training in PEM, all participants were asked about their experiences. They were highly positive.

On a ten-point scale, they ($n = 44$) rated various aspects of the training.

Personal significance of the program: 9.16.

Professional significance of the program: 9.36.

Accuracy of their profiles: 9.23.

Competence of the trainer: 9.84.

Some of the more focused responses included:

- “Very positive learning experience; good, usable information.”
- “I think I understand some of the reasons I failed to connect with some students. I think I have some tools to use.”
- “I just hope I can control my own immediate responses based on my phase to communicate better with students/ mentors/peers more effectively.”

As with many useful concepts learned in workshops, the initial response was very positive. A follow-up of three students for each teacher was initiated with a student intervention form. Teachers were asked to apply the PEM concepts they had learned by indicating the following areas for each student:

- strengths;
- negative behaviors;
- personality structure (*a la* PEM);
- psychological needs (motivation);
- preferred communication channel;
- observed distress behaviors;
- specific problem area to be addressed;
- planned intervention strategies; and
- degree of success, if strategies had been implemented.

This exercise allowed the teachers to reflect on specific aspects of the training. The level of response went from perfunctory to involved. That is, some staff completed the forms because they were asked; others used the opportunity to reflect on what they implemented/ were implementing.

The certified PEM trainer who began the project reviewed the forms. He responded to each teacher with suggestions. He also offered periodic Skype sessions to discuss techniques for using other strategies. These sessions were poorly attended.

Shortly after the student intervention forms were received, the school head was contacted to determine if he and the staff would find on-site observation of staff and feedback to them to be of value in assisting the usage of PEM. They declined the offer.

At the end of the year, a feedback form was sent to the staff to determine the degree to which PEM had impacted how they interacted with students. They were asked the importance of various PEM concepts (on a five-descriptor scale from “Does not apply” to “Very important”) and how well they had been prepared to use them (again, on a five-descriptor scale from “Does not apply” to “Excellent preparation.” Unfortunately, the return of the forms was low – only about 20 percent.

The responding participants rated all of the PEM concepts to be moderately (4) to very important (5). The preparation varied between minimal (3) and excellent (5). Those in the “minimal” category were some of the more complex concepts, such as various aspects of distress (lack of positive motivation), how to motivate, and interactions styles. All of the other categories were rated as moderate or excellent, including personality structure, character strengths.

The one telling response was that the staff said they would have preferred periodic coaching and mentoring after the training. This may have explained the limited impact of the training.

Discussion

Communication and learning preferences

Developing relationships is critical to student achievement (Goodman, 2015; Rimm-Kaufman and Sandilos, n.d.). The core of these relationships is connecting via communication and learning preferences.

Teachers who respond positively in connecting with different types of students and learners will attain higher levels of achievement, as the results of this study have shown. Those students who are more in conflict with their teachers, as evidenced by different communication and learning preferences, do not perform as well, especially in the classroom.

However, simply providing teachers with an understanding of the differences and basic training in alternative communication and delivery options is not enough. Teachers need support, as do their students.

Reinforcing training

Time, money, and energy spent on updating knowledge and skills need to show the all-important “return on investment.” Simply showing up and being involved to varying degrees may spark interest at the time, but the effects can wane very quickly without ongoing practice and feedback (Averell and Heathcote, 2011).

It has been estimated that:

- less than half of the skills and information presented in training sessions will be transferred to the job unless there is follow-up;
- within six months, as much as 75 percent of the training will be lost without follow-up; and
- after one year, some participants will retain as little as 10–15 percent of what was presented without reinforcement (BLR, 2018).

Coaching, mentoring, and self-reflection are some of the ways to reinforce training (Moran, n.d.). Organizations must be intentional to maximize the benefits of providing professional development. This may be very similar to student teaching, where supervising teachers (akin to mentors and coaches) are present to observe and redirect when necessary.

Changing behavior

Organizations progress as they translate their purpose into goals; change their goals in objectives; change objectives into action; and evaluate the results of those actions as they relate to the success of the organization. Change would appear to be simple process (Lewin, 1947): unfreezing from the current position, moving to a new position, and freezing there, until a reason emerges to change again.

During the process, forces emerge to either help or hinder change. An analysis of balance between these forces can help facilitate change or postpone it. These forces may be inter- or intrapersonal (idiographic), or organizational (nomothetic) (cf. Getzels and Guba, 1957). The idiographic forces may precede or override the nomothetic ones.

Change may occur in four sequential stages (Hersey *et al.*, 1996). First comes a change in knowledge – awareness of something new. Without new information, one is limited to what he or she knows currently. Next would come a change in attitude – interpreting the new knowledge and responding to it. Third would be a change in individual behavior – doing something different or differently. With a change in individual attitude and behavior would come the fourth stage, change in group (or organizational) behavior.

Movement through the first three stages would be personal, or internal. The process can stop at any stage if the individual does not embrace what comes next. For example, if I do not see the value in the new information, my attitude is negative, and I am unlikely to change my behavior:

[I facilitated a Dental Hygiene for Teachers workshop some years ago. The dentist who provided the technical information offered that there were two reasons for dental disease – bacterial and nutritional.

It takes a colony of bacteria about 24 hours to grow in the mouth. Therefore, if you clean your mouth completely once a day, you will eliminate the bacterial cause of dental disease.

A Kindergarten teacher in the group asked if one should brush three times a day. The dentist went through the information again, adding guidance about brushing and flossing. The teacher persisted with what she “knew” about brushing – one should brush three times a day. She was not convinced about the new information.

The likelihood is that she did not change her *attitude* about dental hygiene, nor did she change her *individual behavior*. She probably continued to brush three times a day.]

As the teacher in the example was unconvinced, it is likely that her dental hygiene lessons to her students were to brush three times a day. She probably did not change her individual behavior and was, therefore, unlikely to add the new information to changing group behavior. Therefore, the change process was stalled at the knowledge level.

This is one example of maintaining the status quo, or system justification. This theory “holds that – to varying degrees – people are motivated (often non-consciously) to defend, justify, and bolster aspects of the societal status quo, and that this is an important psychological and ideological contributor to resistance to change” (Jost, 2015, p. 622). Without adequate impetus, change is unlikely.

If change is important to progress toward organizational goals, what can be done? The predominant strategies are (cf. Dent and Galloway, 1999):

- education;
- participation;
- facilitation;
- negotiation;
- manipulation; and
- coercion.

Obviously, some of these are positive, and others can be perceived as negative. The success of change lies in a blending of the personal and organizational dimensions into transactional behavior (Getzels and Guba, 1957). If behavior is, as Lewin (1947) suggested, a function of personality and experience, leaders would be most effective when considering the interaction of personality and experience (current with regard to the organization and the applicants' work histories when reviewing what the workforce brings with them).

Personality is the more elusive to interpret. We have many theories at our disposal (cf. Briggs *et al.*, 1943-1998; Costa and McCrae, 1992; Keirse, 1978; McCarthy, 1980).

The reality is that personality does not change (Costa and McCrae, 1994); however, individuals can adapt their behaviors to interact with others effectively. Failure to adapt can lead to miscommunication and lack of achievement.

In school situations, teachers are in control of the classroom environment. Instructional delivery is usually limited to what the teacher prefers.

Summary

A longitudinal study was undertaken as the next phase into research about the efficacy of the PEM. Previous studies (Bailey, 1998; Cicinelli, 2013; Gilbert, 2011; Hawking, 1995; Martin, 2001; Ruud, 1983; Wallin, 1993) indicated that aspects of personality – perceptions, motivations, and communication styles – impacted the performance of students (cf. Pennock and Moyers, 2012).

Differences in classroom performance were related to the similarity or dissimilarity of students with their teachers. This was a common finding from previous studies.

Standardized tests, those with more objective criteria than GPAs, showed no significant differences among the middle school students involved in the study. However, high school students continued to show significant differences, similar to disparity in their GPAs. This echoed the need for teachers to improve relationships with high school students, especially those with different communication and learning preferences (Gallagher, 2013; Goodman, 2015; Rimm-Kaufman and Sandilos, n.d.).

While the initial training in the PEM was extensive and follow-up was provided, the lack of internalization of the concepts or reinforcement in concept usage appeared to be a missing factor that might have helped demonstrate greater efficacy.

What was apparent was that differences between teacher and student communication preferences showed differences in performance, especially in the classroom. An additional factor was that teachers were likely to continue teaching as they always did, especially if possible changes were not reinforced – through coaching, mentoring, or self-reflection.

Implications and suggestions for further research

This study revealed a decided difference in classroom performance and some differences in performance on standardized instruments that relies on criteria established by norming. It would be interesting to know if the differences could be reduced by coaching and mentoring teachers as they learn and adopt new/alternative communication and delivery concepts.

If the decision and policy makers want better performance that also reduces or eliminates disparities between groups, the resources must be in place to support changes. Simple exposure to new techniques is not enough.

Another aspect of change that would be interesting to examine is the degree of distress (lack of positive needs fulfillment) teachers experience. Levels of distress can thwart change, since teachers lose considerable energy in coping with the issues that accompany distress.

This study did not account for cultural differences. A larger study with multiple sites might allow culture to be added as a comparative metric.

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