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P.O. Box 350997 Jacksonville, Florida 32235-0997
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**ISSN:** 1941-3432

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Cover image Peggy's Cove Lighthouse New Brunswick, Canada

# Students' beliefs and attitudes about a business school's academic advising process

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**ABSTRACT**

In Study One, 14 business majors in the School of Business were interviewed about their academic advising experiences. Using the data obtained, a paper-and-pencil questionnaire was constructed for Study Two and administered to 406 senior business students. The questionnaire elicited students' attitudes toward and beliefs about a number of procedures relevant to the academic advising process. The procedures included the number of advising sessions a semester, the time spent during each advising session, the quality of advice provided, the students' comfort level and their personal relationships with the advisor, the advisors' helpfulness, the availability of the advisor for meetings, the degree to which the advisors were organized, and whether advisors answered their questions. The questionnaire also elicited responses about students' desire for specific categories of information and whether advisors provided it. The categories included liberal studies, transfer classes, majors and minors, graduation requirements, electives, internships, careers, and personal issues.

Keywords: Advising business students, business students' attitudes, business students beliefs

## INTRODUCTION

Student retention rates may depend upon quality academic advising, especially during the freshman and sophomore years (Beal & Noel, 1980; Crockett, 1985; Gordon, Habley & Assoc., 2000; Tinto, 1987). But what do students want from their advisors? What do they receive? And how do they evaluate what they receive compared to what they want? The two studies described here examine School of Business students' beliefs about and attitudes toward the academic advising process.

## METHOD: STUDY ONE

One member of the research team with training and experience in interviewing conducted ninety-minute interviews with seven men and seven women students randomly selected from the senior level business policy courses in a midwestern university's School of Business. The interviews were audio taped, transcribed, and the data examined for themes and patterns.

The respondents possessed a mean age of 23.8 and mode of 22. Their majors included accounting, business administration, finance, marketing, management, and international business. Of the volunteers, eight entered the university as freshmen and six transferred in from another school.

Only two respondents reported one advisor each during their time at the university while four had two, three, and four advisors each. Note that students are not assigned a School of Business faculty advisor until admitted to the business program, usually during the junior year. Freshmen and sophomores who declared a business major are provided a staff advisor in the Dean's office. The business administration majors remain with the staff advisor after admission to the School of Business while management, marketing, finance, international business and accounting majors are assigned faculty advisors. The results of the study have been reported in Kukowski, Dexter, & Alexander (2002, 2003), Dexter, Kukowski, & Alexander (2002), and Alexander, Kukowski, & Dexter (2003a, 2003b).

## FINDINGS: STUDY ONE

How much time did students spend with their advisors? The responses ranged from a few seconds to a

half-hour with little consistency among respondents. How much time did students want with their advisors? The responses varied from a few minutes to a half-hour.

How did respondents feel about the amount of time spent with their advisors? They did not like waiting 15 minutes or more for their advisors to finish with a previous appointment, especially when the previous student was not prepared for the appointment. But they liked the personal attention received from advisors.

How many times a semester do students want to meet with advisors? Some students found that meeting once a semester was sufficient. Others met once a semester but preferred more frequent meetings. They felt they couldn't get to know their advisors in just one meeting a semester and they needed more guidance than one meeting would provide.

What did respondents believe about meeting three or more times a semester? Some students preferred multiple meetings each semester. On the other hand, some believed that multiple meetings were a waste of time.

What do advisors need to know? Respondents wanted their advisors to know and understand both the liberal studies requirements and those classes necessary to complete the major. They didn't want to come up short on required liberal arts or major courses and therefore unable to graduate.

What did the advisors know? Most students believed their advisors possessed knowledge of the liberal arts and major requirements. However, one person noted than an advisor lacked adequate knowledge of the major requirements. .

Do students prepare for advising sessions? Many students prepared trial schedules prior to their advising sessions. They set up preliminary schedules and backup schedules in the event of closed classes or recommendations from advisors. They believed that preparation made the sessions go smoothly.

Though students prepared their own schedules, some wanted their advisors to check them over. They wanted their advisors to reinforce the fact that they were on the right track.

Do respondents need advising assistance? Some respondents needed no advising assistance. They knew the classes they needed to take, the classes offered that semester, and did not need help with schedules

Why did students seek new advisors? First, students obtained new advisors when they switched majors. Some entered as undeclared or listed a major they later wanted to change. When they switched majors, they changed to advisors teaching in that major. They believed the new advisors would possess more knowledge about the course requirements and they wanted to make sure they had all the classes needed to graduate

Respondents also changed advisors when their previous advisors quit the university, took leaves, went on sabbaticals, or retired. In these instances the department reassigned advisors and informed students of their new advisors.

The respondents offered suggestions to improve advising. First, they believed advisors should spend more, rather than the same or less, time with their advisees. They thought 10 minutes was not enough time but 30 minutes would be sufficient. They suggested that advisors should set up 15 to 30 minute blocks of advising time but permit students to sign up for the amount of time they wanted.

Advisors should be better prepared and trained. Professors who advise students should attend workshops to learn about the resources available to students, what they need to know, and the answers to frequently asked questions.

Students prefer to interact with their advisors on a personal level. Advisors should know their advisees' names and their hometowns. They should make small talk with their advisees and put them at ease during advising sessions.

Students prefer one, rather than several, advisors. But they knew that some faculty members do not like advising. They did not want advisors who disliked advising students.

Most students prefer private advising sessions. That is, they prefer one-to-one advising sessions rather than group sessions.

**METHOD: STUDY TWO**

Using the themes and patterns from the first study, the investigators constructed a paper-and-pencil questionnaire designed to elicit beliefs about and attitudes toward the advising process. First, it asked for responses to 48 belief statements on a five-point scale with "strongly agree" and "strongly disagree" at the endpoints. It then listed 22 attitude statements on a five-point scale from "very good" to "very bad." Last was a set of demographic questions. Because of small cell sizes, "strongly agree" and "agree" were collapsed into one category termed, "agree" during data analysis. And "strongly disagree" and "disagree" were collapsed into "disagree." In like manner, "very good" and "good" became "good," and "very bad" and "bad" became "bad."

Before completing a questionnaire, each subject who agreed to participate read and signed a disclaimer explaining the purpose of the study and directing the individual to turn in a blank questionnaire if he/she did not wish to participate. The subjects did not identify themselves on the questionnaire.

All seniors enrolled in the School of Business must successfully complete business policy as a prerequisite for graduation. Questionnaires were therefore administered to all students taking the business policy course. Over a three-year period, a total of 406 questionnaires were completed and analyzed.

Most respondents (87%) fell between the ages of 21 and 25 inclusive with the remaining a year younger or a year or more older. New students can enter the university either fall or spring semesters. Most (81%) first enrolled at the university for the fall semester while only 12% first enrolled for winter semester; the remaining did not answer. The majority (55%) enrolled as freshmen while 15% first enrolled as sophomores, 25% as juniors and 5% as seniors.

Reflecting the university population, 52% of the subjects were female and 47% male with 1% no answer. The subjects' majors included business administration (31%), accounting (19%), finance (18%), marketing (13%), management (11%), international business (3%), and other (5%).

How many advisors did the respondents see over their college/university career? Only 10% kept one advisor throughout their college careers. Most (39%) had two, 32% three, and 13% four. When asked to indicate the number of business faculty advisors they had, 38% listed one, 46% had two, and 11% were assigned three over their last two years of university work.

**FINDINGS: STUDY TWO**

How many advising sessions a semester are sufficient? As seen in Table 1 ($p<.001$, $df=4$), more than half of the respondents (56%) agreed that one advising session a semester was sufficient. And 57% rated one advising session good. As for two advising sessions a semester, the responses were split almost evenly between agree and disagree (38% vs. 37%). But only one-fifth (22%) rated two sessions negatively. For three advising sessions, very few students believed three were needed (8%) and few rated three sessions positively (14%). It seems that students prefer one advising session a semester. And many would likely agree with a respondent from Study One who thought three sessions a waste of time. See Table 1 in the Appendix.

How much time did the students want during each advising session? From Table 2 ($p<.001$, $df=4$) we see that almost three-fourths (71%) spent 10 to 15 minutes with an advisor. And a slight majority (55%) liked 15 minute advising sessions.

Less than a third of the subjects (29%) spent 30 minutes with their advisors but half (50%) had positive feelings about 30 minute sessions. Almost two-thirds (61%) agreed that their advisors gave them all the advising time they needed and a full 66% liked receiving all the time they needed.

Did the respondents want more time with their advisors? About a third agreed (34%), another third disagreed (33%), and another third (33%) indicated neither.

Apparently, 10 to 15 minutes with an advisor is acceptable to the majority of the respondents. On the other hand, even though half liked 30 minute advising sessions, not many spent 30 minutes with their advisors. And a good many not only took all the time they needed, but they also liked taking all the time they needed whatever that time might be. Thus the data tend not to support the qualitative study results that found students generally want more time with an advisor. See Table 2 in the Appendix.

What was the quality of the advice received? From Table 3 ($p<.001$, $df=4$), about three-fourths (72%) of the subjects agreed that advisors provide good advice. And 81% disagreed that advisors provide bad advice. Also, almost none held negative attitudes toward the advice received while (73%) possessed positive attitudes. That is, respondents believed they received good advice from their advisors and they liked the advice received. See Table 3 in the Appendix.

What is the nature of the relationship between faculty advisors and advisees? As seen in Table 4 ($p<.001$, $df=4$), an advisee's relationship with his/her advisor was examined on five levels. More than three-fourths of the respondents (77%) felt comfortable with their advisors. And 86% believed their advisors were friendly while 81% said advisors made them feel welcome during advising sessions. But slightly less than half (48%) believed their advisors knew them well. When the question was phrased in the negative, about half disagreed (51%) that their advisors didn't know them well while 30% agreed.

Study One found that students want to interact with advisors on a personal level. Study Two generally supported this finding. Subjects felt comfortable talking with their advisors, they found their advisors friendly, and they felt welcome in their advisors' offices. Note, thought, that some believe their advisors do not know them well. See Table 4 in the Appendix.

Were advisors helpful and were they available to their advisees? Exactly three-fourths of the respondents (75%) said their advisors were helpful during their meetings while almost that many (70%) held positive attitudes toward the help received (see Table 5, p<.001, df=4). Also, 73% believed their advisors were available to meet with them and they liked having advisors available to meet with them (70%). When phrased in the negative, 84% disagreed that their advisors were not available. In sum, students believed advisors were helpful and available and they held positive attitudes toward both situations. See Table 5 in the Appendix.

Were the advisors organized when students met with them? From Table 6 (p<.001, df=4), almost two-thirds (63%) believed their advisors were organized and only one-fifth (21%) believed their advisors were unorganized. However, when asked if their advisors should be better prepared for the advisees' visits, the responses were split with slightly more than a third (38%) agreeing. The results here appear contradictory. Most students believe their advisors are organized, yet many also want their advisors to be even more organized and prepared. The latter finding coincides with respondents' recommendations from Study One. See Table 6 in the Appendix.

Did advisees want advice on the liberal studies classes to take? Less than half (44%) wanted advice from their advisors on liberal studies classes to take (Table 7, p<.001, df=4). When asked if their advisors went over the liberal studies requirements, slightly more than half (53%) answered in the affirmative. These findings tend to support the qualitative data. Students need to know the liberal arts requirements. If they don't possess this information prior to an advising session, they need the information from their advisors. Many, however, undoubtedly possess the information prior to the advising session and therefore do not want it. See Table 7 in the Appendix.

Did advisees want advice on the course of study to major in and did they receive it? Less than one-third (27%) wanted advice on the major to take though about one-third (31%) received such advice (Table 8, p<.001, df=4). For advice on minors, about one-fourth (27%) wanted advice though almost one-half (46%) did not receive advice on a minor. Majors and minors appear not high on the list of things to discuss with advisors. See Table 8 in the Appendix.

Did advisees want advice on the requirements needed to graduate? Most of the respondents (85%) wanted such advice and most (77%) received it (Table 9, p<.001, df=4). Almost three-fourths of the respondents (74%) wanted advice on their progress toward graduation. And half received help with their graduation applications. Students appear goal oriented; they want to know the courses to take for graduation and seek the information out. They also want information on their progress and solicit that as well. See Table 9 in the Appendix.

Are internships important to the students? Many (59%) wanted advice on internships, but less than one-fourth (23%) of the respondents received internship information from their advisors (Table 10, p<.001, df=4). A staff member, rather than faculty, performs the internship function for the School of Business and that may account for the number who did not receive internship advice. That is, students will visit their advisors to obtain registration authorization. However, they must make a special effort to see the internship coordinator and many do not make that effort. In general, then, more students want internship information than receive it. See Table 10 in the Appendix.

Do students want career advice from their advisors? As seen in Table 11 (p<.001, df=4), more than half (59%) of the respondents wanted career advice from their advisors but slightly more than one-fourth (27%) received it. About half (51%) did not receive any career advice. Students want career information from their advisors, but are not receiving it. See Table 11 in the Appendix.

Do advisees want or need advice of a personal nature? Almost two-thirds of the advisees (65%) needed no advice on personal issues while less than 10% needed such advice (Table 12, p<.001, df=4). But one-quarter of the advisees (25%) received advice on personal issues. And 22% liked the advice with 72% checking neither. Students believe they do not need personal advice from an advisor, though some receive it. See Table 12 in the Appendix.

In general, did the advisees like or dislike their advisors? Almost three-fourths (73%) rated their advisors good (Table 13, p<.001, df=4). Less than 10% held negative attitudes toward their advisors. See Table 13 in the Appendix.

## CONCLUSIONS

How many advising sessions a semester are sufficient? Advisees prefer one, though some need two. A School of Business faculty member who performs academic advising might want to allocate several days before registration for advising and make subsequent appointments with those advisees who indicate a need for another session.

How much time should a faculty advisor allocate to each advisee? Most students spend about 15 minutes although many want more time. Rather than allocate advising sessions in 15 minute increments, the advisor might vary the times; those advisees who want more time can sign up for longer periods.

Students rate highly the advice given by faculty advisors. All faculty members have access to advisor training sessions and the university especially encourages new hires to take advantage of them. The training undoubtedly improves the quality of the advice provided.

What is the nature of the relationship between advisors and advisees? The data indicate a positive relationship. As long as faculty advisors act friendly and make their advisees feel comfortable and welcome, students will want to come in for advising sessions. Whether knowing an advisee well is a necessary component of the relationship is not well understood; in most cases it might not be possible.

Were advisees helpful and available to their advisees? Those students surveyed provided affirmative answers. These two characteristics seem key components of the advisor's role. Unless advisors make themselves available, students can't find them. And unless helpful, advisees are not motivated to seek them out. Also, the number of sessions most likely becomes irrelevant and relationships undoubtedly decline.

Were the advisors organized? The advisees believed their advisors were organized. Organization is another key component because it renders the advising sessions more productive and makes more than one session unnecessary.

Did advisees want advice on those liberal studies classes needed for graduation? Many do not though more than half receive it anyway. Because a student cannot graduate with liberal studies requirements unfulfilled, wise advisors review the information during advising sessions.

Did advisees want guidance on majors? In the present study, many did not. Because we surveyed only individuals admitted to the School of Business, they had chosen their majors. Therefore, most students' faculty advisors need not discuss majors or minors.

Did advisees want advice on the requirements needed to graduate? They wanted advice on graduation requirements and on their progress toward graduation, and they received it. Of all the advice possible, progress toward graduation seems most salient to students. Effective advisors will review each advisee's progress during each advising session.

Are internships important to students? Many students want advice on internships but few received it from faculty advisors. Because a member of the dean's office staff handled internships, faculty members were rarely involved. However, faculty advisors need close contact with the internship advisor. Many employers value internships and like to see them on their applicants' resumes. Advisors, then, might make some effort to inform students of internships and encourage them to visit the internship advisor.

Do students want career advice? Many do but few receive it from advisors. Faculty advisors can provide career advice in two ways. First, they can access occupational data from the U.S. government and pass it along to students. Second, they can urge advisees to utilize the career services staff and recruiting activities provided on campus.

Do advisees want personal advice? They neither want such advice nor do they receive it. Business faculty members usually do not possess the training required to adequately provide counseling on personal matters. Instead, when advice on problematical personal issues is needed, they can direct advisees to the campus counseling center.

Do advisees like their advisors? They do. Almost three-quarters held positive attitudes toward their advisors while only a few possessed negative feelings.

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**Appendix**

Table 1

*Number of Advising Sessions Wanted a Semester (%)*

| | One | Two | Three |
|---|---|---|---|
| Agree | 56 | 38 | 8 |
| Neither agree nor disagree | 18 | 25 | 23 |
| Disagree | 26 | 37 | 69 |
| Good | 57 | 45 | 14 |
| Neither good nor bad | 23 | 33 | 35 |
| Bad | 20 | 22 | 51 |

Table 2

*Time Spent During Each Advising Session (%)*

| | 10-15 minutes | 30 minutes | All the time I need | Want more time |
|---|---|---|---|---|
| Agree | 71 | 29 | 61 | 34 |
| Neither agree nor disagree | 7 | 1 | 21 | 33 |
| Disagree | 22 | 70 | 18 | 33 |
| Good | 55 | 50 | 66 | |
| Neither good Nor bad | 26 | 35 | 24 | |
| Bad | 19 | 15 | 10 | |

Table 3

*Quality of Advising Received (%)*

| | | | | |
|---|---|---|---|---|
| Agree | 72 | 2 | | |
| Neither agree nor disagree | 18 | 17 | | |
| Disagree | 10 | 81 | | |
| Good | | | 73 | |
| Neither good nor bad | | | 24 | |
| Bad | | | 3 | |

Table 4

*Relationship with Advisor (%)*

| | Comfortable with advisor | Friendly advisor | Makes me feel welcome | Knows me well | Doesn't know me well |
|---|---|---|---|---|---|
| Agree | 77 | 86 | 81 | 48 | 30 |
| Neither agree nor disagree | 10 | 7 | 11 | 14 | 19 |
| Disagree | 13 | 7 | 8 | 38 | 51 |

Table 5

*Advisor Helpful and Available (%)*

| | Helpful | Available | Not Available |
|---|---|---|---|
| Agree | 75 | 73 | 04 |
| Neither agree nor disagree | 16 | 10 | 12 |
| Disagree | 9 | 17 | 84 |
| Good | 70 | 70 | |
| Neither good nor bad | 22 | 20 | |
| Bad | 8 | 10 | |

Table 6

*Advisor Organized or Unorganized (%)*

| | Advisor organized | Advisor unorganized | Be better prepared |
|---|---|---|---|
| Agree | 63 | 21 | 38 |
| Neither agree nor disagree | 18 | 21 | 32 |
| Disagree | 19 | 58 | 30 |

Table 7

*Liberal Studies Advice (%)*

| | Want advice | Reviewed requirements |
|---|---|---|
| Agree | 44 | 53 |
| Neither agree nor disagree | 31 | 20 |
| Disagree | 25 | 27 |

Table 8

*Advice on Majors and Minors (%)*

| | Want advice on majors | Received advice on majors | Wanted advice on minors | Received advice on minors |
|---|---|---|---|---|
| Agree | 27 | 31 | 27 | 19 |
| Neither agree nor disagree | 31 | 31 | 35 | 35 |
| Disagree | 42 | 38 | 38 | 46 |

Table 9

*Advice on Graduation Requirements (%)*

| | Want advice | Received advice | Want advice on progress | Received help with grad app |
|---|---|---|---|---|
| Agree | 85 | 77 | 74 | 50 |
| Neither agree nor disagree | 8 | 10 | 20 | 19 |
| Disagree | 7 | 13 | 6 | 31 |

Table 10

*Advice on Internship Opportunities (%)*

| | Want internship information | Received internship information |
|---|---|---|
| Agree | 59 | 23 |
| Neither agree nor disagree | 26 | 30 |
| Disagree | 15 | 47 |

Table 11

*Advice on Careers (%)*

| | Want advice | Received advice |
|---|---|---|
| Agree | 59 | 27 |
| Neither agree nor disagree | 24 | 22 |
| Disagree | 17 | 51 |

Table 12

*Advice on Personal Issues (%)*

| | Need advice | Received advice |
|---|---|---|
| Agree | 9 | 25 |
| Neither agree nor disagree | 26 | 23 |
| Disagree | 65 | 52 |
| Good | | 22 |
| Neither good nor bad | | 72 |
| Bad | | 6 |

Table 13

*Rate My Advisor (%)*

| My advisor Is | |
|---|---|
| Good | 73 |
| Neither good nor bad | 19 |
| Bad | 8 |

# Entrepreneurial postures and psychological traits: the sociological influences of education and environment

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**ABSTRACT**

Sociological influences are important factors in the success of an entrepreneurial venture. Sociological influences such as level of education and supportive environment may have moderating influences on the relationships between psychological traits and entrepreneurial styles. A cross-sectional study was conducted among entrepreneurs in a capitol city situated in a Southern Metropolitan Statistical Area (SMSA).

Results of the study support significant positive relationships between psychological traits and entrepreneurial styles. Findings also suggest that level of education and supportive environment moderate the relationships of psychological traits and entrepreneurial styles. Overall, research findings have a number of theoretical and managerial implications. For example, venture capitalists, management practitioners, and other business professionals who are involved in high risk ventures may employ this entrepreneurial model as a useful tool to assess entrepreneurial capabilities, managerial tendencies that may improve return on investment relative to human capital. Also, it may be a useful tool for selecting team members for new business start ups, and evaluating applicants for intrapreneurship positions in the corporate world. Another implication is in the area of entrepreneurship pedagogy, linking the relationship between psychological traits and entrepreneurial styles could be used as a technique for identifying students for entrepreneurial careers. In addition, these findings also indicate that education may enhance entrepreneurial success relative to the nourishment of competencies such as innovativeness, proactiveness, risk taking behavior and competitive aggressiveness.

Keywords : Entrepreneurial Styles, Education, Supportive Environment, Psychological Traits

## INTRODUCTION

The study of entrepreneurship is a multidimensional process that calls for further and continuing research studies. Prior research studies have been filled with inconsistency and controversy relative to the appropriate definition of an entrepreneur and the relevance of personality traits study in entrepreneurship (Beugelsdijk 2007; Jaafar & Abdul-Aziz 2005; Aldrich and Martinez 2001; Gartner 2001; Lee and Peterson 2000; Lyon, Lumpkin & Dess 2000; Shane & Venkataraman 2000; Aldrich and Kenworthy 1999; Busenitz & Barney 1997; Lumpkin & Dess 1996; Gartner 1988, Carland et al. 1984; Cole 1969; Knight 1921).

The personality traits approach to entrepreneurship has been criticized by a number of researchers as unsatisfactory and questionable (Gartner, 1988; Aldrich & Zimmer, 1986, Low & Macmillan, 1988) in explaining entrepreneurial behavior and performance. They concluded that there are no personality characteristics that predict who will attempt to, or be, a successful entrepreneur. As Low and MacMillan (1988, p. 148) stressed, entrepreneurs tend to defy aggregation. They reside in the tails of the population distribution; and though they are expected to differ from the mean of the society, the nature of their differences is not predictable. As a result, it seems that any attempt to profile entrepreneurs solely along the personality characteristics may be overly simplistic. In light of the aforementioned criticism including the suggestion made by Gartner (1988, p. 57) and Vesper (1980) that entrepreneurship should be analyzed from the perspective of what an entrepreneur does and not what he is, and that creation of an organization is a complex process and the outcome of many influences. Therefore, the dual purpose of this empirically based study is first, to explore whether psychological traits –need for achievement, locus of control, tolerance for ambiguity, and risk taking propensity are correlates of entrepreneurial postures. Second, whether sociological factors such as level of education and supportive environments moderate the relationships between entrepreneurial postures and psychological traits.

## LITERATURE REVIEW

Carland et al. (1984), in an attempt to provide answers to the questions that: 1) if entrepreneurs exist as entities distinct from small and large organizations and 2) if entrepreneurial activity is a fundamental contributor to economic development, on what basis may entrepreneurs be separated from non-entrepreneurial managers in order for the phenomenon of entrepreneurship to be studied and understood? After reviewing literature of small business and entrepreneurship and using Schumpeter's work (1934), they defined an entrepreneur "as an individual who establishes and manages a business for the principal purposes of profit and growth. The entrepreneur is characterized principally by innovative behavior and will employ strategic management practices in the business" (p. 158). This theoretical piece distinguished the entrepreneur from a small business owner. Carland et al. also defined a small business owner as "an individual who establishes and manages a business for the principal purpose of furthering personal goals. The business must be the primary source of income and will consume the majority of one's time and resources. The owner perceives the business as an extension of his or her personality, intricately bound with family needs and desires". This definition recognized the overlap between small business owner and entrepreneur but provided additional support to Schumpeter's characterization of entrepreneurship as innovation oriented.

### Entrepreneurial Postures

Entrepreneurial organizations as defined by Covin and Slevin (1991, p.2) are organizations with entrepreneurial postures. Organizational postures are organizations which engage in product-market or technological innovation, risk taking behavior, and proactiveness, and these particular behavioral pattems are recurring. These patterns pervade the organization at all levels and reflect the top managers' overall strategic philosophy on effective management practice. Covin and Slevin (1989); Ginsberg (1985); Lumpkin and Dess (1996); Morris & Paul (987); Schafer (1990) advanced Schumpeter's (1934, 1942) definition and they defined innovativeness as the firm's propensity to engage in new idea generation, experimentation, and research and development activities. This includes the development and enhancement of products and services and new administrative techniques and technologies for performing organizational functions. Lumpkin and Dess (1996) categorize innovation as either product-market or technological. Miller and Friesen (1978) suggest that product-market innovation focuses on product design, market research, and advertising and promoting. Maidique and Patch (1982) suggest that technological innovation is comprised of product and process development, engineering, research, and an emphasis on technical expertise and industry knowledge.

Venkatraman (1989) suggests that proactiveness refers to processes aimed at anticipating and acting on future needs by seeking new opportunities, introducing new products and brands ahead of competition; and strategically eliminating operations that are in the mature or declining stages of the life cycle. Thus, proactiveness requires a desire and willingness to think and initiate actions to answer future situations and threats. Proactiveness is critical to entrepreneurial success because it suggests a forward-looking perspective that is accompanied by innovative activity.

The concept of risk taking behavior has long been associated with entrepreneurship. Early definition of entrepreneurship centered on the willingness of entrepreneurs to engage in the calculated business-related risk (Brockhaus 1980). In the 19$^{th}$ century, John Stuart Mill argued that risk-taking was a paramount attribute of entrepreneurs. This view of entrepreneurs as risk takers continued to gain support till the twentieth century. McClelland (1961, p.210) accentuated the support with his postulation that "Practically all theorists agree that entrepreneurship involves, by definition, taking risks of some kind". Risk taking appears to be one of the most distinctive features of entrepreneurial behavior, since creating new ventures is by definition a risky business.

Linking the relationship between psychological traits and entrepreneurial postures is imperative for theoretical and empirical reasons, because entrepreneurs with a certain psychological traits may have a tendency to exhibit certain degree of entrepreneurial posture and showing this tendency may provide benefits to the organization. In prior research studies, achievement need, tolerance for ambiguity, risk taking and locus of control were analyzed with respect to entrepreneurial characteristics and were identified as correlates of being or desiring to be an entrepreneur (Ahmed, 1985; Begley& Boyd, 1987; Bonnett & Furnham, 1991). Prior research findings related to psychological traits have been corroborative and thus this study is aimed at providing additional insights and understanding to the relationship between psychological traits and entrepreneurial postures. In the subsections that follow, some of the most researched psychological traits will be discussed and how they are related to entrepreneurial postures.

**Need for Achievement**

In McClelland (1961), *The Achieving Society*, the need for achievement trait has been empirically linked to entrepreneurial activity. The need for achievement is defined as a tendency to choose and persist at activities that hold a moderate chance of success or a maximum opportunity of personal achievement satisfaction without the undue risk of failure. From diverse samples of business executives, the author's findings revealed that senior marketing managers have the highest need for achievement. He posited that needs are learned and therefore culturally, not biologically determined; and some cultures produced more entrepreneurs because of the socialization process that creates a high need for achievement.

In a longitudinal analysis of the need for achievement scores of college freshmen, McClelland (1965) concluded that a high need for achievement is a predictor of entrepreneurship and is based on influences of childhood and adult training and experiences. McClelland's work was initially influenced by Murray's (1938) studies in the development of his Need for Achievement Theory (Fineman, 1977). McClelland shared with Murray the belief that analysis of fantasy is the best way to assess motives, which are primarily based on unconscious state. Through the usage of the Thematic Appreception Test (TAT), which requires the writing of imaginative stories by subjects in response to a set of pictures, the stories were content analyzed for achievement imagery to obtain an n Ach score by the author. Through the correlation studies in the laboratory, McClelland determined that those high in n Ach, as measured by the TAT, tended to exhibit an original five behavioral traits and was reduced to three: (1) Takes personal responsibility for finding solutions to problems; (2) Sets moderate achievement goals and takes calculated risks; and (3) Wants concrete feedback regarding performance. McClelland conducted a number of studies demonstrating that high n Ach and the subsequent manifestation of the above behaviors correlated strongly with entrepreneurial success (McClelland, 1961, 1965a).

A number of studies suggest that need for achievement is higher in company founders, compared to managers (Begley & Boyd, 1987; Miner, Smith & Bracker, 1989). It is also related to company growth (Miner et al.1989). Such findings that relate the level of need for achievement of the founders and the financial growth of the organization may come from a relationship between the psychological traits of founders and the levels of entrepreneurial orientation they exhibit.

**Internal Locus of Control**

Rotter 1966 defined Locus of Control as an individual's perception about the underlying main causes of events in his/her life. Or, more simply: Individual believes that his/her behaviour is guided by his/her personal decisions and efforts (internal); or as unrelated to his or her actions and is guided by fate, luck, or other external circumstances (external). People with internal locus of control believe that they can control what happens in their lives. On the other hand, people with external locus of control tend to believe that most of the events in their lives result from luck, being at the right place at the right time, and the behaviors of powerful people. Research indicates that individuals with internal locus of control often have a more expressed need for achievement (Brockhaus 1982; Lao 1970; Gurin et al 1969).

In an empirical study conducted by Khan and Manopichetwattana (1989) they addressed the proposition whether the characteristics of innovative and non-innovative small firms have significant differences. Their sample was comprised of 50 manufacturing small businesses in the Texas area using cluster and correlational analyses to analyze the data. They found a positive relationship between internal locus of control and innovation. Boone, Debrabander and Van Witteloostujin (1996) empirical research investigation focused on the furniture industry with a sample comprised of small firms and family owned small businesses, they were interested in getting at whether chief executive officers or top management team internality had a positive effect on organizational outcomes. Replicating previously tested hypotheses, they found internal locus of control to be associated with company performance. Their findings corroborated prior study findings of (Begley and Boyd 987; Bonnett and Furnham 1991, Nwachukwu 1995) that internal locus of control is an important entrepreneurial psychological trait.

**Tolerance for Ambiguity**

Budner (1962) defined tolerance for ambiguity as the "tendency to perceive ambiguous situations as desirable," whereas intolerance for ambiguity was defined as "the tendency to perceive … ambiguous situations as sources of threat" (p. 29). An ambiguous situation is one in which the individual is provided with information that is too complex, inadequate, or apparently contradictory (Norton, 1975, p. 607). The person with low tolerance of ambiguity experiences stress, reacts prematurely, and avoids ambiguous stimuli. On the other hand, a person with

high tolerance of ambiguity perceives ambiguous situations/stimuli as desirable, challenging, and interesting and neither denies nor distorts their complexity of incongruity.

Frenkel-Bruswik (1948) reported a study comprised of 100 adults and 200 California children from ages 9 to 14 years old in which the researcher looked at their attitudes to ethnic prejudice and argued that tolerance for ambiguity is to be conceived as "a general personality variable relevant to basic social orientation" (p. 268). Entrepreneurial managers are generally believed to tolerate more ambiguity than conservative managers because entrepreneurial managers confront less-structured, more uncertain set of possibilities (Bearse 1982), and actually bear the ultimate responsibility for the decision (Gasse 1982, Kilby 1971).

Theoretically, people who best tolerate ambiguity are those who obtain superior results if their strategic objective is to pursue growth. Entrepreneurs who seek to increase market shares in their respective industries face more uncertain phenomenon than those who seek to increase profitability. Because the strategy utilized to implement increase in market share is based on conditions of uncertainty, which requires a greater tolerance of ambiguity. Thompson (1967) stipulates that in a determinist world, the higher the number of external dependencies faced by firms, the greater the degree of uncertainty.

Dollinger (1983) with a sample size of 79 entrepreneurs using Budner's scale, he found that entrepreneurs scored high in the tolerance for ambiguity test. The results showed that tolerance for ambiguity trait is positively related to entrepreneurial activity. Gupta and Govindarajan (1984) data from 58 strategic business units revealed that greater marketing/sales experience, greater willingness to take risk, and greater tolerance for ambiguity, on the part of strategic business unit general manager, contribute to effectiveness in the case of "build" strategic business units; but hamper it in the case of "harvest" strategic business units. Carland and et al. (1989) research revealed that people who best tolerate ambiguity are also the most innovative. Tolerance for ambiguity is reported to relate to personal creativity (Tegano, 1990) and the ability to produce more ideas during brainstorming (Comadena, 1984).

These findings suggest that creativity and innovativeness requires a certain degree of tolerance for ambiguity. The ability to tolerate ambiguous situations may also be positively related to the risk-taking behavior of the entrepreneur. Risk-taking requires a certain degree of tolerance for ambiguity. In addition, research indicates that individuals with intolerance for ambiguity tend to perceive higher degrees of risk under the same circumstances (Tsui 1993). Proactive entrepreneurs do not abide by traditional ways of the status quo, but they continually question it in an attempt to improve and devise better operational methods and managerial styles.

**Risk Taking Propensity**

The perceived probability of receiving rewards associated with the success of a situation that is required by the individual before he or she will subject himself/herself to the consequences associated with failure, the alternative providing less reward as well as less severe consequences than the proposed situation" (Brockhaus, 1980, p.513). The usual interpretation of a risk taker is someone who in the context of a business venture pursues a business idea when the probability of succeeding is low (Smith-Hunter, Kapp, and Yonkers, 2003). In a study conducted by MacCrimmon & Wehrung (1990) drawing on a sample of five hundred chief executives of businesses to determine the validity of common stereotypes of who takes risks and who avoids risks using factor and linear discriminant analyses, the researchers found that the most successful executives were the biggest risk takers; the most matured executives were the most risk averse.

Begley and Boyd (1987) found that risk taking had a curvilinear relationship with performance in entrepreneurial firms. Their findings suggested that entrepreneurs exhibiting moderate levels of risk taking would outperform those exhibiting either very high or very low levels of risk. The researchers concluded that "risk taking has a positive effect on return on asset" (p. 89). Palich and Bagby (1995) found that entrepreneurs tend to categorize business situations as possessing less risk than non-entrepreneurs. In other words, "entrepreneurs may not think of themselves as being any more likely to take risks than non-entrepreneurs, but they are nonetheless predisposed to cognitively categorize business situations more positively" (p. 426).

Busenitz (1999) also argued that entrepreneurs tend to view situations more favorably than non-entrepreneurs, and his results indicated that entrepreneurs do indeed use representativeness more in their decision making and are more overconfident than managers in large organizations" (p. 325).

In a study conducted by Xiao, Alhabeeb, Hon and Haynes (2001) using data from the 1995 Survey of Consumer Finances with an approximate sample size of three thousand to examine risk tolerance level of family business owners and non-owner's of business; found that family business owners were more tolerant than non-business owners.

In an earlier study that was conducted by Miller and Toulouse (1989) with a sample comprised of 97 firms from the province of Quebec in which the authors were interested in determining the relationships that three aspects

of the chief executive's (CEO) personality have with the strategies, structures, decision-making methods and performance of their firms. They found that chief executive officer's flexibility was associated with niche strategies, simple, informal structures, and intuitive, risk-embracing decision-making.

Entrepreneurial risk behavior has been examined in the literature by both the personality trait approach (McClelland 1961, 1965; Brockhaus 1980, 1982; Brockhaus and Horowitz 1986; Sexton & Bowman 1985; Begley and Boyd 1987) and cognitive approach (Kirzner 1973, 1979; Bird 1988; Palich and Bagby 1995; Busenitz 1999). . There is yet an agreement among researchers and practitioners on explaining entrepreneurial risk behavior in a parsimonious manner. The body of literature on entrepreneurship suggests the importance of risk-taking behavior in any entrepreneurial activity; but the level of risk-taking accepted for different kinds of entrepreneurs in different industries and non-entrepreneurs remains an illusion

**Education**

A number of studies have argued that education facilitates entrepreneurial success by providing for the nourishment of competencies such as innovativeness and ability to acquire resources. These competencies are regarded as imperatives to success in many entrepreneurial ventures (Bird 1993; Ronstadt 1984). Notably, in highly technical industries, a specified amount of education may be required as a prerequisite for employment.

. Borjas (1987) study of self-employment experience of immigrants and native-born using both 1970 and 1980 Census data, analyses revealed that education has a positive and significant impact on self-employment rates. In all samples, the higher the education levels, the higher increase in the individual's ability to provide a service to those persons who may desire it; or perhaps that higher education levels increase the organizational or managerial skills of workers.

Vesper (1980) pointed out that the more education an entrepreneur has had in business (especially small business) the more likely the entrepreneur will succeed in the current venture. Vesper (1980) asserts that prior mental programming in the form of both formal education and experience in the particular line of work of the new venture repeatedly crops up as correlated in generally positive ways with odds of success in studies of startups (p. 32). The level of technical and business skills is also a major factor in successfully starting and managing a small business (Davidson 1991; Vesper 1983). In Davidson's (1991) Sweden study, the findings also suggested that business-related experience and business education were highly correlated with the entrepreneur's ability to start and manage a business.

Lerner, Brush and Hisrich (1995) conducted a study to determine which factors affecting performance of Israeli women entrepreneurs using a sample of 220 businesses. They reported that human capital and business skills (education) have significant explanatory power on performance. Their findings also revealed that a majority of the entrepreneurs were highly educated with college and graduate degrees. The research effort of Bird (1993) showed a trend toward higher educational attainment among entrepreneurs. Based on the aforementioned literature review, the following hypotheses are formulated.

**Supportive Environment**

Supportive environment refers to a combination of factors in the environment that play a role in the development or nurturing of entrepreneurship and entrepreneurial activities. Empirical studies on entrepreneurial environments suggest that societies that keep rules and regulations at minimum, offer tax incentives provide training and counseling services to start-up entrepreneurs, increase the likelihood of new venture creation (Dana 1987; 1990). Factors such as the availability of financial resources, location in large urban areas, and the presence of universities for training and research are also suggested to be very critical in increasing the rate and nurturing of new venture developments (Pennings 1982). It is also suggested that entrepreneurs need support services in preparing business plans, getting loans and business assistance from incubators ( Hoy et al. 1991).

Aldrich and Wiedenmayer (1993) suggest that the sociopolitical environment may be so powerful to create or destroy entrepreneurship in a country. Covin and Slevin (1989) also consider environmental factors to be a reasonable start point for any analysis of entrepreneurship. They alleged that external variables moderate the relationship between entrepreneurial posture and firm performance. Covin and Slevin (1989) also pinpointed the idea that the external environment can be operationally defined in terms of forces or elements that are too numerous to incorporate in a specific sense into a single model.

H1 Need for Achievement is positively related to Entrepreneurial Postures
H2 Locus of Control is positively related to Entrepreneurial Postures

H3 Tolerance for Ambiguity is positively related to Entrepreneurial Postures.
H4 Risk taking propensity is positively related to entrepreneurial postures
H4a Supportive Environment moderates the relationship between Need for Achievement and Entrepreneurial Postures.
H4b Supportive Environment moderates the relationship between Internal Locus of Control and Entrepreneurial Postures.
H4c Supportive Environment moderates the relationship between Tolerance for Ambiguity and Entrepreneurial Postures.
H4d Risk Taking Propensity is positively related to Entrepreneurial Posture
H5a Level of Education moderates the relationship between Need for Achievement and Entrepreneurial Postures.
H5b Level of Education moderates the relationship between Internal Locus of Control and Entrepreneurial Postures.
H5c Level of Education moderates the relationship between Tolerance for Ambiguity and Entrepreneurial Postures.
H5d Level of Education moderates the relationship between Risk taking Propensity and Entrepreneurial Postures.

**Research Instrument**

The sampling frame for this study was a mailing list of the registered small business owners situated in a "deep" south Standard Metropolitan Statistical area (SMSA). Three hundred self-reported questionnaires with a self-addressed, stamped return envelope were mailed to the randomly selected business owners from the original five hundred and fifty (550) registered population lists. A total of ninety (90) questionnaires were returned, completed and usable, representing a 30.percent response rate of the 300 mailed questionnaires

Need for achievement was measured using a three-item; 7-point Likert type scale that was originally developed by Edwards (1959) to measure achievement motivation. The advantages of using EPPS over the other scales are: (1) Entrepreneurs scored higher than the norm on the achievement scale (Hornaday and Bunker 1970; Hornaday and Aboud 1971; Decarlos and Lyons 1979; Begley and Boyd 1986). (2). It is easier to score and administer than the other scales (Fineman 1977). (3). It has a higher internal consistency rate (.74) and stability across time than the projective scale (Fineman 1977). (4). Unlike the other scales, there is a consistent convergent validity of the measure in prior entrepreneurship research (Hornaday and Bunker, 1970; Hornaday and Abdoud 1971; Decarlos and Lyons 1979; Begley and Boyd 1986). The mean score of achievement motivation among respondents was 5.88, which indicated that, on the aggregate, used-car entrepreneurs possess a high level of need for achievement.

Internal locus of control was measured using a four-item, 7-point Likert type scale that was originally developed by Rotter (1966) to measure generalized expectancies. The researcher selected these scale items that are most relevant to entrepreneurs and company owners for space constraint and respondents' convenience. A higher score reflects higher internality of the entrepreneur under study. The four items adopted for this study are: (1a). Many of the unhappy things in people's lives are partly due to bad luck. (1b). People's misfortunes result from the mistakes they make. (2a) The idea that teachers are unfair to students is nonsense. (2b). Most students do not realize the extent to which their grades are influenced by accidental happenings. (3a) I have always found that what is going to happen will happen. (3b). Trusting to fate has never turned out as well for me as making a decision to take a definite course of action. (4a). Becoming a success is a matter of hard-work; luck has little or nothing to do with it. (4b). Getting a good job depends mainly on being in the right place at the right time. These scale items have been reported to have high reliability and validity in a number of studies (Boone, Debrabander and Witteloostuijin 1996; Boone and Debrabander 1993; Boone et al. 1990; Boone et al 1991). Rotter scale remains the most widely used and shortest scale to make use of the forced choices. The scale concurrent, construct and predictive validity remains impressively high (0.60-0.88) with alpha reliability of 0.69-0.76 (Furnham and Steele 1993, p. 452). The mean score of internality among respondents was 5.70, which indicated that, on the aggregate, used car entrepreneurs possess a high level of internal locus of control.

Tolerance for ambiguity was measured using a three –item, 7-point Likert type scale that was originally developed by Budner (1962) to measure tolerance for ambiguity. The scale items selected are most relevant to entrepreneurs and small business owners. These negatively worded items are: (1).It is more fun to tackle a complicated problem than to solve a simple one. (2). Many of our most important decisions are based upon insufficient information. (3). Often the most interesting and stimulating people are those who don't mind being

different and original. A higher score reflects a higher tolerance for ambiguity. Budner's scale has an average internal reliability of .49, which seems poor but Budner explained that the nature of the concept itself, the definition of which posits a complex, multidimensional construct provides for low or average reliability. He further asserted that the more complex the construct and the more complex the measure, the lower will the reliability estimate be. The most important advantage of this scale over the others is the freedom from social desirability bias and recognition of the highly complex structure of the concept. In terms of validity, its intercorrelation (0.85) with the other three scales was high enough to suggest that all four scales were tapping on the same dimensions. The prevailing strength of Budner's scale over the others is that, it was designed to measure three dimensions of ambiguity: the complexity, novelty and insolubility of a situation. Budner's scale is a natural choice of measurement instrument for a research study of this nature considering its many attributes. The mean score of tolerance for ambiguity among respondents was 5.24, which indicated that, on the aggregate, used car entrepreneurs possess above average level of tolerance for ambiguity.

Risk taking propensity was measured by employing and adapting Choice Dilemmas Questionnaire (CDQ) instruments. Choice Dilemmas Questionnaire was developed by Wallach and Kogan in 1959 and 1961. The instrument was designed to obtain probability preferences in everyday life situations. In the author's earlier work, subjects were presented with a 12-item instrument in which each item represented a choice dilemma between a risky and a safe course of action. The subject's selection of the probability level for the risky alternative's success that would make it sufficiently attractive to be chosen thus reflected the deterrence value of failure in a particular decision area (Wallach and Kogan, 1959 and 1961). The same procedure was adopted but only two items from the 12-item questionnaire will be adapted in this study for parsimony, space and subject's convenience. Items from Kogan and Wallach instrument have been extensively used by researchers of risk taking propensity (Brockhaus 1980; Sexton and Bowman 1982, 1983). Wallace and Kogan (1964) reported reliabilities of .53 for the men .62 for the women using odd-even coefficients stepped up by the Spearman Brown formula and considered to be adequate. Thus, Choice dilemmas Choice (CDQ) instrument is the natural and appropriate choice for the present study.

To measure the entrepreneurial posture of the businesses from the perspective of the business owners, a seven point Likert-type scale was employed. An eleven item instruments were selected, the wording of these items was very similar to entrepreneurial posture scales developed and tested for reliability by Khandwalla (1977), Miller (1983), Covin and Slevin (1986, 1989) and Covin and Covin (1990). Subsequent scale enhancement work conducted by Lumpkin (1998) was also consulted to capture distinctions between product/service and process innovativeness. The mean score value of entrepreneurial postures among respondents was 4.60, which indicated that, on the aggregate, used car organizations are entrepreneurial. This result is consistent with previous research studies (Chadwick 1998; Knight 1997; Naman & Slevin, 1993; Covin & Slevin, 1989). Table 1 summarizes the descriptive statistics of the study variables

**Descriptive Statistics of Variables**

**Table 1**

| STATISTICS | Supportive Environment | Need Achievement | Internal Locus of Control | Tolerance for Ambiguity | Risk Taking Propensity | Entrepreneurial Postures |
|---|---|---|---|---|---|---|
| Mean | 5.60 | 5.90 | 5.70 | 5.84 | 3.90 | 4.60 |
| Median | 5.65 | 6.00 | 6.00 | 5.45 | 3.50 | 4.50 |
| Mode | 6.10 | 6.30 | 6.00 | 5.45 | 3.60 | 4.50 |
| Std. Dev. | 1.25 | 1.25 | 1.02 | 1.08 | 1.03 | 1.15 |

***Psychological Traits and Entrepreneurial Postures***

As can be seen from the correlation table, psychological variables are correlated among each other. This was expected due to the self-report nature of the data, as well as conceptual relationships between psychological traits. The results of Pearson's correlations suggest significant positive correlations between the psychological traits (need for achievement, internal locus of control, tolerance for ambiguity, and risk taking propensity) and entrepreneurial postures (See Table 2)

**Correlation Coefficients Table 2**

| | EP | NARCH | ILC | TA | RTP | LED | SUPENV |
|---|---|---|---|---|---|---|---|
| EP | | | | | | | |
| NARCH | .43** | | | | | | |
| ILC | .35** | .03 | | | | | |
| TA | .42* | -.08 | -.25** | | | | |
| RTP | .33* | -.05 | .14 | | | | |
| LED | .40 | .34** | .35** | .05 | -.00 | | .47** |
| SUPENV | .28 | .17 | .30** | .28** | .06 | | |

** = P < 0.01 level
* = p < 0.05 level

EP = Entrepreneurial Postures, NARCH = Need for Achievement, ILC = Internal Locus of Control, TA = Tolerance for Ambiguity, RTP = Risk Taking Propensity

Hypotheses H1, H2, H3, and H4, were tested employing hierarchical regression analysis. Hierarchical regression is the statistical technique of choice when a single metric dependent variable is presumed related to one or more metric independent variables (Hair et al., 1995). The objective of this statistical procedure is to explain changes in the dependent variable with respect to changes in the independent variables.

Hypothesis #1 posits that need for achievement is positively related to entrepreneurial postures. The results of the regression analysis are shown in Table 3. To control for extraneous influences on the regression equation, the dependent variable (entrepreneurial postures), was first entered and followed by the independent variable (need for achievement). A significant relationship was found ($b = .45$, $p < .001$), and it explained 29% of the $R^2$ in entrepreneurial postures. Hypothesis #2 states that internal locus of control is positively related to entrepreneurial postures. Hypothesis #3 states that tolerance for ambiguity is positively related to entrepreneurial postures. Hypothesis #4 states that risk-taking propensity is positively related to entrepreneurial postures. Statistical analyses were performed on the full model (internal locus of control, tolerance for ambiguity and risk taking propensity) employing the hierarchical procedure of SPSS (Morgan and Griego 1998, p. 142). Results showed significant positive relationships between internal locus of control and entrepreneurial posture ($b = .22$, $p < .05$), and also significant positive relationships between tolerance for ambiguity and entrepreneurial postures ($b = .22$, $p < .01$)), with additional $R^2$ change of 25% explained in entrepreneurial postures. The positive relationship between risk-taking propensity and entrepreneurial postures was not significant ($b = .17$, $p < .10$). The result may be attributable to the small sample size and low statistical power.

**Table 3**

**Regression Results: Psychological Traits and Entrepreneurial Postures**

| Independent Variables | Beta | SE | F | $R^2$ |
|---|---|---|---|---|
| Need for Achievement | .450*** | .015 | 13.74 | .29 |
| Internal Locus Of Control | .221* | .031 | | |
| Tolerance for Ambiguity | .220** | .021 | | |
| Risk taking Propensity | .109 | .012 | | |
| $R^2$ | | | | .54 |

Adjusted $R^2$ =.51 Change in $R^2$ .25
Only standardized regression coefficients are shown
N = 90, *** P < 0.001, ** P < 0.01

Hypothesis 4a – 4d stated that supportive environments may moderate the relationships between psychological traits ((need for achievement, internal locus of control, tolerance for ambiguity, and risk taking propensity) and entrepreneurial postures. The results of the moderated regression analyses are presented in Table 4. The interactions terms of the supportive environments and psychological traits were computed using SPSS by multiplying the supportive environments variable and each of the four sub constructs of psychological traits (need for achievement, internal locus of control, tolerance for ambiguity and risk taking propensity) to ascertain whether the $R^2$ of the two products provided incremental explanatory power of entrepreneurial postures. The interactions of need for achievement and supportive environments variables provided incremental $R^2$ change of 0.12 at a significance level of $p < 0.001$. The interactions of internal locus of control and supportive environments variables provided incremental $R^2$ change of 0.06 at a significance level of $p < 0.01$. The interactions of tolerance for ambiguity and supportive environments variables provided incremental $R^2$ change of 0.05 at a significance level of $p < 0.001$. The interactions of risk taking propensity and supportive environments variables provided incremental $R^2$ change of 0.03 at a significance level of $p < 0.05$.

**Regression Results: Supportive Environments Moderating the Relationships between Psychological Traits and Entrepreneurial Posture**

**Table 4**

| **Entrepreneurial Postures (Dependent Variable)** | Beta | $R^2$ | Changes in $R^2$ |
|---|---|---|---|
| **Independent Variables** | | | |
| Need for Achievement | .450*** | .290 | |
| Internal Locus of Control | .221* | .110 | |
| Tolerance for Ambiguity | .220** | .102 | |
| Risk-Taking Propensity | .105 | .033 | |
| Supportive Environment | .151 | .010 | |
| $R^2$ 0.54 | | | |
| Need for Achievement X Supportive Environment | .460*** | .412 | .120 |
| Internal Locus of Control X Supportive Environment | .224** | .171 | .060 |
| Tolerance for Ambiguity X Supportive Environment | .223*** | .152 | .050 |
| Risk Taking Propensity X Supportive Environment | .110* | .066 | .030 |
| | | .80 | 0.260 |

$R^2$ =0.80, Adj. = 0.76
Change in $R^2$ 0.26, *** P < 0.001, ** P < 0.01, * P < 0.05

Overall, the moderated multiple regression results suggest that, the interactions of supportive environment and psychological traits (need for achievement, internal locus of control, tolerance for ambiguity, and risk taking propensity) provided incremental $R^2$ change or higher explanatory powers of entrepreneurial posture of twenty six percent as hypothesized in H4a, H4b, and H4c and H4d.

Hypothesis #5a – 5d: Education may moderate the relationships between the psychological sub constructs (need for achievement, tolerance for ambiguity, locus of control, and risk taking propensity) Entrepreneurial Postures. The results of the moderated regression analyses are presented in Table 5. The interactions terms of the levels of education and psychological traits were also computed using SPSS by multiplying the levels of education variable and each of the four sub constructs of psychological traits (need for achievement, internal locus of control, tolerance for ambiguity and risk taking propensity) to ascertain whether the $R^2$ of the two products provided incremental explanatory power of entrepreneurial postures. The interactions of need for achievement and levels of education variables provided negative $R^2$ change of -0.02 at a significance level of $p < 0.01$. The interactions of internal locus of control and levels of education provided incremental $R^2$ change of 0.17 at a significance level of $p < 0.01$. The interactions of tolerance for ambiguity and levels of education provided incremental $R^2$ change of 0.14 at a significance level of $p < 0.001$. The interactions of risk taking propensity and levels of education provided incremental $R^2$ change of 0.04 at a significance level of $p < 0.01$.

Overall, the moderated multiple regression results suggest that, the interactions of levels of education and three of the four sub constructs of psychological traits (internal locus of control, tolerance for ambiguity, risk taking propensity) provided thirty three percent positive incremental $R^2$ change or higher explanatory powers of entrepreneurial postures as hypothesized in $H_{5b,}$ $H_{5c,}$ and $H_{5d.}$

**Regression Results: Education Moderating the Relationships between Psychological Traits and Entrepreneurial postures**

**Table 5**

| **Entrepreneurial Orientation (Dependent Variable)** | Beta | $R^2$ | Changes in $R^2$ |
|---|---|---|---|
| **Independent Variables** | | | |
| Need for Achievement | .450*** | .290 | |
| Internal Locus of Control | .221* | .110 | |
| Tolerance for Ambiguity | .220** | .102 | |
| Risk-Taking Propensity | .105 | .033 | |
| Levels of Education | .143 | .018 | |
| $R^2$ **0.54** | | | |
| Need for Achievement X Levels of Education | .455** | .271 | -.020 |
| Internal Locus of Control X Levels of Education | .223** | .281 | .170 |
| Tolerance for Ambiguity X Levels of Education | .224*** | .243 | .140 |
| Risk T. P. X L. of Education | .107** | .075 | .040 |
| | | --------- | ---------- |
| | | **0.87** | **0.33** |
| **$R^2$ = 0.87, Change in $R^2$ 0.33,** *** P < 0.001, ** P < 0.01, * P < 0.05 | | | |

**DISCUSSION**

The theoretical underpinnings for this empirical study specified that psychological traits relate positively to entrepreneurial postures, and sociological influences such as, supportive environments, and levels of education, moderate the relationships between psychological traits and entrepreneurial postures.

Results of the Pearson's correlations provide modest support for positive significant relationships between psychological traits and entrepreneurial postures. The results of the hierarchical regression largely support significant relationships between psychological traits (need for achievement, internal locus of control and tolerance for ambiguity) and entrepreneurial postures. Moderated regression results also support that supportive environments moderate the relationships between psychological traits and entrepreneurial postures as shown in the incremental changes from fifty four percent to eighty percent of variance explained as hypothesized $H4_a$, $H4_b$, $H4_c$, and $H4_d$.

Moderated regression results of levels of education moderating the relationships of psychological traits and entrepreneurial postures as shown in table 5 provide interaction effects of the incremental changes from fifty four percent to eighty seven percent of variance explained as hypothesized $H5_a$, $H5_b$, $H5_c$, and $H5_d$. Interestingly, the interaction effects of need for achievement and level of education yielded negative incremental change of two percent of the variance explained, the researcher alludes the result to the strong internal correlation between the attainment of higher education and goal achievement or semblance of level of education and the need for achievement measurement instruments. For example, one of the three instruments employed in measuring the need for achievement is,(1). I will not be satisfied unless, I have reached the desired level, has a good semblance to the instrument of measuring higher education goal. It may also be implied that, the more level of education a person attains, the less drive to succeed in other areas.

While a number of research studies have reported social and environmental factors as necessary conditions for the appearance of entrepreneurship or enhancing firm performance (Sexton & Bowman, 1985; ., Sandberg & Hofer, 1987; Covin & Slevin, 1989; Bloodgood, Sapienza; & Carsrud, 1995; Dess, Lumpkin, & Covin, 1997;

Lumpkin & Dess, 2001), research findings reported herein tend to address a research void by linking sociological factors, such as, supportive environment, levels of education as moderating influences of psychological traits in explaining entrepreneurial postures. Furthermore, majority of the past research findings have converged on the relationship between entrepreneurship and psychological traits with primary focus of distinguishing entrepreneurs from the general population (Ahmed, 1985; Begley& Boyd, 1987; Bonnett & Furnham, 1991; Nwachukwu 1995). In contrast, this research ventured to consider the dimension of entrepreneurial postures as the dependent variable and psychological traits as the predictors. In addition, it provided significant insights into the sociological influences of supportive environment and education on the relationship between entrepreneurial postures and psychological traits. In essence, it lends support to the criticisms advanced by Gartner (1988), Low and MacMillan (1988), Aldrich and Zimmer (1986), psychological traits alone are inadequate in explaining entrepreneurial behavior. Again, please note Gartner (1988) and Vesper (1980) suggestion that the creation of an organization is a complex process and a contextual event, the outcome of many influences. Finally, this is a more robust model for understanding entrepreneurial postures because it incorporates variables from three different levels of analyses, including the individual personality traits, the firm level of entrepreneurial postures, and the sociological factors of environment.

Future data-based research studies addressing psychological traits and sociological influences on entrepreneurial postures should employ a more representative sample from multiple industries with provisions for inter-industry variations in life cycles. The length of the questionnaire should be significantly reduced to improve the response rate. Because of the dynamic process of entrepreneurship, a triangular approach comprised of the three prevalent approaches including managerial perception employed in this study, resource allocation and longitudinal approaches should be employed in future research to minimize the limitations of these findings.

Overall, these research findings have a number of theoretical and managerial implications. For example, banks, angel investors, venture capitalists, management practitioners, and other business professionals who are involved in risk ventures may employ this entrepreneurial posture model as a useful tool to assess entrepreneurial capabilities, entrepreneurial postures that may improve return on investment relative to human capital. Also, it may be a useful tool for selecting team members for new business start ups, and evaluating applicants for intrapreneurship positions in the corporate world, among others. Another implication is in the area of entrepreneurship pedagogy, linking the relationship between psychological traits and entrepreneurial postures could be used as a technique for identifying students for entrepreneurial careers. Another significant contribution of this study is that the study was conducted with actual entrepreneurs in the service sector. Prior studies have drawn their samples from mostly students, managers and non-entrepreneurs (Twomey 1988; Miner 2000). In addition, the service sector has received very little attention in previous entrepreneurship research, yet it represents one of the fastest growing sectors in the global economy (Zahra et al., 1999).

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# ELL shadowing: Strengthening pedagogy and practice with pre-service and inservice teachers

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**ABSTRACT**

English language learners (ELL) student shadowing is a technique for examining specific areas of an ELL's school experience, and gaining insight into the student's perspective about school. Shadowing involves the selection of a student (often at random) and following him/her from 2-3 hours, noting the types of listening—one-way (lecture) or two-way (dialogue)—as well as academic speaking opportunities, at every five-minute interval. The purpose of student shadowing is to gather information about the daily life of an ELL student in order to participate in a larger conversation on improving the educational experiences for this group of students. This method of collecting student engagement information is introduced in this article as a way to train pre-service and inservice teachers in becoming more sensitive and responsive to the cultural and linguistic needs of ELLs. Both teacher education programs and district professional development must become more focused and aligned regarding coursework and on-going reflective opportunities. Such reflective teacher training and professional development opportunities will enable ELLs to acquire English and the academic language needed to succeed in school and beyond.

Key Words: English learners, academic language, teacher training

## INTRODUCTION

Each year in the United States, school systems contend with the changing face of public school children—a growing number who are English language learners (ELLs)—and enter school with many rich traditions and cultures, but also the task of doing "double the work" of learning grade level content while also learning English. According to Capps et al. (2005), by 2010, 13% of the total United States population will be foreign-born. A large portion of these students come from homes where English is not spoken, while many of their families do not have a deep history of formal education (August & Hakuta, 1994). This presents a challenge for many educators who may not know how to close the linguistic and cultural gaps of their students (Soto-Hinman & Hetzel, 2009). In the midst of the complexity of these dynamics, Title III of the No Child Left Behind Act (2001), continues to hold educational systems accountable for both ELL progress in English proficiency, or English language development (ELD)—the basics of English—and academic language development (ALD), or grade-level expectations. Educators and educational systems must become better at addressing both ELD and ALD simultaneously, or ELLs will not have access to the educational opportunities and futures they deserve. According to Abedi & Dietel (2004), "ELL students' academic performance is far below that of other students, oftentimes as much as 20 to 30 percentage points lower, and usually shows little improvement throughout the years." For many ELLs, the achievement gap begins when they enter school as they may already lag far behind in listening vocabulary and opportunities to orally practice English. In this way, the changing demography calls for both a change in the way that teachers are trained to work with ELLs, as well as the incorporation of on-going professional development, to assist teachers in becoming more effective with this growing group of students.

## TEACHER EDUCATION PROGRAMS

Many states require teachers to obtain a certification in order to teach ELLs. In California, it once was a separate certificate consisting of four classes that exposed pre-service teachers meeting the needs of ELLs. With the surge in the number of ELLs, California has moved towards an embedded certification process, requiring, in most colleges and universities, one course that addresses the needs of ELLs, while also integrating topics on ELLs into the rest of the teacher preparation coursework. In other words, teachers in California come out of teacher preparation programs with an ELL certification as part of their credentialing process. While this looks like a positive concept at the outset—teachers no longer have to take additional coursework outside of their credential to teach ELLs, and every teacher gets at least one course focused on the needs of this group—one course is hardly

enough to become competent with the specific needs of ELLs. As Darling-Hammond (2008) suggests, "Teacher qualifications, teacher's knowledge and skills, make more difference for student learning than any other single factor. Clearly, this means if we want to improve student learning, what we have to do is invest in teachers' learning. We have to be sure that teachers understand not only their content area, which is very important, but also, how do students learn? How do different students learn differently? How do students acquire language? How do second language learners need to be taught?" Teacher education programs must become more focused and aligned in both the coursework and fieldwork opportunities that they require of their pre-service teachers in order to ensure appropriate cultural and linguistic differentiation of ELLs.

**SUSTAINED AND FOCUSED PROFESSIONAL DEVELOPMENT**

According to findings from the National Staff Development Council (2009), "Teachers are not getting adequate training in teaching special education or limited English proficiency students. More than two-thirds of teachers nationally had not had even one day of training in supporting the learning of special education or LEP students during the previous three years . . . ." Specifically, teachers would benefit from both a series of courses, and a variety of coursework experiences, that sensitize them to the specific linguistic and cultural needs of ELLs in our schools. Additionally, when teachers enter their classrooms, on-going and focused professional development that supports them in best meeting the needs of ELLs, and scaffolding instruction for this group of students, is paramount to closing their literacy gaps (Soto-Hinman & Hetzel, 2009). The National Staff Development Council (2009) suggests that teachers need close to 50 hours of professional development to improve their skills and their students' learning. Therefore, teacher learning must also be on-going. One exercise that can both be incorporated into teacher education programs and used in staff development to sensitize teachers to the instructional and linguistic needs of ELLs is called the ELL Shadowing Project.

**PURPOSE OF SHADOWING**

ELL student shadowing is a technique for examining specific areas of an ELL's school experience and gaining insight into the student's perspective about school. Shadowing involves the selection of a student (often at random) and following him/her from 2-3 hours, noting classroom and campus activities. The purpose of student shadowing is to gather information about the daily life of an ELL student in order to participate in a larger conversation on improving the educational experiences of students.

In a school or district context, teachers may engage in shadowing projects where they follow a particular student for several hours to gain understanding regarding their educational experiences, as well as obtain qualitative data about their academic lives. Such shadowing projects have been conducted in several universities in Southern California, including Whittier College, Biola University and Claremont Graduate University, as well as a variety of school districts (the Los Angeles Unified School District and Hayward Unified School District) and county education offices (Kern and Santa Barbara Counties) in California, in order to have pre-service teachers and educators gain a glimpse into a day in the life of ELLs in their school settings. Participants have been trained using a protocol (see illustration that follows) where they monitor the domains of listening, speaking, reading and writing at five-minute intervals throughout a school day. It is important to note that participants are not ready to formally shadow ELLs until they have both studied the elements of academic talk in the classroom, as well as the different forms of listening that they will monitor. At Whittier College, students do not shadow an ELL until mid-way through the course when they have amply studied academic speaking and listening.

Using Figure 1, the ELL shadowing protocol, pre-service teachers monitor, at every five-minute interval, who the primary speaker is—either the student or teacher—as well as who the primary speaker is speaking to. In addition, the type(s) of listening involved in the interaction are also monitored, whether it is one-way or two-way. One-way listening is an interaction where students are taking in information, such as a lecture. Typically, in one-way listening, there is not room for clarification or questions. In contrast, two-way listening allows for clarification to be made, because the interaction is dialogue-based. That is, the interaction is considered a conversation. Throughout the shadowing project, participants are often astounded by the fact that the teacher will do most of the talking, with much of the interaction being lecture-based, despite the fact that the teacher's primary duty is to develop ELL's language.

Figure 2 is an example of the ELL shadowing protocol completed for two intervals in a classroom interaction. In the first language exchange at 10:20, we see that the ELL has just engaged in a song during English/Language Arts time. Therefore, academic talk has been coded as a 4, because the primary speaker is the student singing with the entire class. Singing has been noted in the two-way listening exchange as the student is

interacting in talk as well and not merely listening as he sings. Under the comments section, the observer has written down any anecdotal notes important to the interaction. Here, specifically, the observer has noted that the student is attentive and nods that he is ready to sing.

In the 10:25 exchange, the student engages in an instructional read aloud. Here, the exchange has been coded 2 under academic one-way listening because the student is taking in information and not asked to respond. Academic speaking has been coded 7 because the teacher is doing the talking while she reads the book aloud to the whole class. Students continued to code interactions this way every five minutes for two to four hours.

The shadowing project allows students to begin to find patterns regarding who is doing most of the speaking in classrooms, and what kinds of listening ELLs are often asked to undertake. Students soon begin to notice that the primary speaker in classrooms is often the teacher, which is the second box under primary speaker (and numbers 5-7). Similarly, students find that the listening interactions are often one-way, or in lecture mode, with little room for questions or clarification on the part of the ELL.

In the shadowing debriefing process, these student interactions become essential to changing instructional practice systemically. Similarly, the shadowing project illuminates for teachers the absence of opportunities for academic language practice in the classroom. Through this process, educators are able to reflect on their own instructional practices, and how such practices may positively or negatively impact student achievement. For example, one teacher in LAUSD's District 6 stated, "The person talking most is the person who is learning most. . . . *And I'm doing most of the talking in my class!"* This process, then, creates the urgency for changing instructional practice across levels.

**RESULTS OF A COURSE SHADOWING PROJECT**

Figure 3 represents the results that have emerged from a class shadowing project at Whittier College in the course Education 504: Second Language Acquisition. About thirty pre-service teachers shadowed ELLs at local schools, across both elementary and secondary levels.

Figure 4 represents the most frequent mode of academic speaking—46.2% (almost 50%)—was the teacher speaking to the whole class. This means that ELLs in these classrooms did not receive as many opportunities for academic language development, which they desperately need in order to become proficient with the language. According the August & Shanahan (2006) of the National Literacy Panel, oral language development is the foundation of literacy for ELLs. In order to become proficient in English, ELLs need ample opportunities to practice language in order to acquire the language at the pace needed (at least one proficiency level per year), as well as to move towards more cognitively and linguistically demanding grade-level material. When this kind of progress does not happen, ELLs can stagnate at basic or social levels of English, which makes access to grade-level and academic curriculum much more difficult. As Goldenberg suggests (2008), "It is not sufficient to learn English so that [a student] can talk to [their] friends and the teacher about classroom routines . . . [students] have to learn what is called 'academic English' a term that refer to more abstract, complex, and challenging language that will eventually permit [them] to participate successfully in mainstream classroom instruction."

**LISTENING**

There were similar results with the lack of listening experiences that ELLs needed during the shadowing process. Instead, ELLs sat with little active listening or engagement during most of the two hours shadowed. Figure 5 represents the specific listening percentages, where 57% of classroom interactions during shadowing were one-way exchanges. One-way listening typically occurs in a lecture where students are unable to ask questions or clarify concepts with the teacher or peers. In fact, the two-way listening mode is most helpful to ELLs because they are given the opportunity to dialogue about difficult cognitively demanding topics. During two-way listening opportunities, ELLs are also able to apply new learning, ask questions of their peers and make deeper connections. This finding points to the need to train teachers about the importance of active listening and engagement in a classroom setting. In fact, if we do not teach listening specifically, it oftentimes will not happen because ELLs may be focusing on just trying to make sense of individual sounds or words. We must scaffold the listening process for students by showing them how to listen and what to listen for. For example, they can listen for specific vocabulary words or generally for the "gist" of a lecture or reading. If we do not teach pre-service teachers how to do this, they will not know how to best support the needs of their students.

## CONCLUSION

Results of the ELL shadowing project almost always include pre-service and inservice teachers becoming more aware of the needs of these students in their classrooms, as well as the importance of scaffolding instruction for them. Pre-service teachers begin to realize that the instructional methods that they do or not use in a classroom will positively or negatively impact the achievement gap. In essence, that they are part of perpetuating the problem or becoming the solution. In fact, they begin to see that listening and speaking are equally important domains of literacy that become scaffolds to reading and writing respectively. For example, listening and reading are both about making meaning, and just as we can read specifically or generally, we can also listen that way. Similarly, speaking and writing are both about output or production of oral and written language. When we allow students to speak out their thoughts before they write them, they will write more clearly and with more confidence.

After the ELL shadowing project, pre-service and inservice teachers are then challenged to design a series of lessons that scaffold language and learning for this group of students. They are in essence using the urgency of what they didn't see in the classroom setting, as well as the new scaffolding techniques that they have learned regarding active listening and oral/academic language engagement, to create new lessons that address the linguistic and cultural needs of their students. In this manner, the ELL shadowing project allows pre-service teachers to practice critical thinking and problem solving skills by experiencing a need they will encounter in the field, as well as becoming aware of the communication and collaboration skills they will need to embed in their teaching to close the achievement gap with ELLs.

Figure 1: Blank ELL Shadowing Form

**ELL Student Shadow Study Observation Form**

**Student First Name: _____ Grade: _____ ELD Level: _____**
**Gender: _____ School: _____**

| **TIME** | **SPECIFIC STUDENT ACTIVITY/ LOCATION OF STUDENT 5-MINUTE INTERVALS** | **ACADEMIC SPEAKING** | **ACADEMIC LISTENING 1-Way 2-Way** | **NO LISTENING (*reading or writing silently*)** | **NOT LISTENING (*student is off-task*)** | **COMMENTS** |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |

| **Primary Speaker** | **Mostly to Whom?** | **Primary Speaker** | **Mostly to Whom?** |
|---|---|---|---|
| **Your Student** | **1. Student** | **Teacher** | **5. Student** |
| | **2. Teacher** | | **6. Small Group** |
| | **3. Small Group** | | **7. Whole Class** |
| | **4. Whole Class** | | |

| **Primary Listener** | **Listening Mostly to Whom?** |
|---|---|
| **Your Student** | **1. Student** |
| | **2. Teacher** |
| | **3. Small Group** |
| | **4. Whole Class** |

Figure 2: Completed ELL Shadowing Form

| TIME | SPECIFIC STUDENT ACTIVITY/ LOCATION OF STUDENT 5-MINUTE INTERVALS | ACADEMIC SPEAKING | ACADEMIC LISTENING 1-Way | 2-Way | NO LISTENING | NOT LISTENING | COMMENTS |
|---|---|---|---|---|---|---|---|
| 10:20 | *"Never Give Up" English/language arts song. Summing up—"make a long story short"* | 4 | | *singing* | | | *Preparation for lesson B. paying attention, watching Head nodding to "Ready?"* |
| 10:25 | *Instructional Read aloud of Miss Rumphius* | 7 | 2 | | | | |

| Primary Speaker | Mostly to Whom? | Primary Speaker | Mostly to Whom? |
|---|---|---|---|
| Your Student | 1. Student | Teacher | 5. Student |
| | 2. Teacher | | 6. Small Group |
| | 3. Small Group | | 7. Whole Class |
| | 4. Whole Class | | |

| Primary Listener | Listening Mostly to Whom? |
|---|---|
| Your Student | 1. Student |
| | 2. Teacher |
| | 3. Small Group |
| | 4. Whole Class |

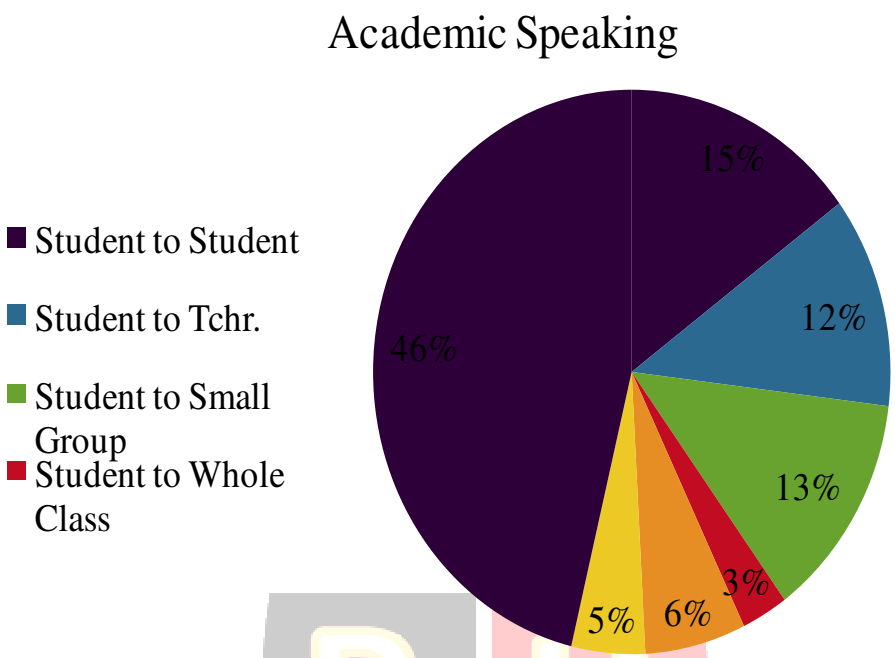
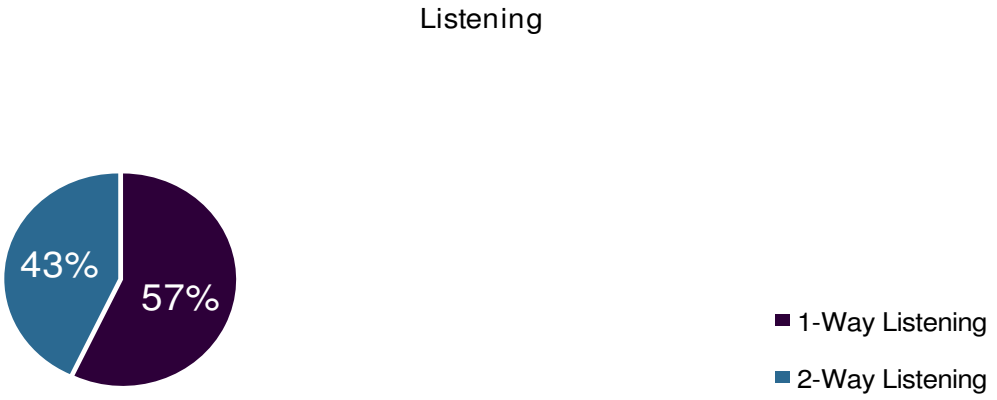



Figure 3: Academic Speaking Results

Figure 4: Academic Speaking Results

| Academic Speaking | | Percentage within speaking |
|---|---|---|
| 1. Student to Student | 35 | 14.8% |
| 2. Student to Teacher | 29 | 12.1% |
| 3. Student to Small Group | 31 | 13% |
| 4. Student to Whole Class | 7 | 2.9% |
| 5. Teacher to Student | 15 | 6.3% |
| 6. Teacher to Small Group | 11 | 4.6% |
| 7. Teacher to Whole Class | 110 | 46.2% |
| Total Incidents | 238 | |

Figure 5: Listening Results

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# The effects of students' knowledge and attitude on the classroom performance

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**ABSTRACT**

This study examines the relationship between exogenous variables to dependent variables of interest regarding the students' learning of subjects. Specifically, the theoretical model links prior computer knowledge and computer attitude to the learning of subjects and students' computer performance, mediated by computer self-efficacy and spreadsheet self-efficacy. The model was empirically tested using repeatedly measured responses to a questionnaire. The empirical technique employs structural equations with latent variables. Discussions of the implications, limitations, and future research suggestions are followed.

Keywords: computer performance, self-efficacy, computer attitude.

## INTRODUCTION

Technologies used in business have evolved from manual bookkeeping to the advanced information technologies over the ages. The fundamental changes brought by information technology (IT) have significantly changed the way companies operate their businesses which, in turn, have led to changes in the management records and procedures. For example, in marketing, technology is a critical factor in every company's external environment as well as customer relationship management (CRM). Also the American Institute of Certified Public Accountants (AICPA) has recently stated that accountants need to change their strategies in reaction to the all-encompassing changes in IT linking business transactions (AICPA 2001). Even though both accounting regulator and industry have called for computer knowledge and skills that are taught in accounting education, there is little research examining the relationship among anxiety, self-efficacy, knowledge and skills in computer-related accounting education.

This study examines the relationship between exogenous variables to dependent variables of interest regarding business students' learning of subjects. Specifically, the theoretical model links students' prior computer knowledge and computer attitude to the learning of subjects and students' computer performance, mediated by computer self-efficacy and spreadsheet self-efficacy. The model was empirically tested using repeatedly measured responses to a questionnaire from the students in a business class. The empirical technique employs structural equations with latent variables.

## LITERATURE REVIEW

### Computer attitude

Monitoring the computer attitudes and developing an understanding of the factors that affect computer attitudes will assist educators in providing appropriate learning experiences to students. The successful integration of computers in educational environments depends, to a great extent, on students' attitudes towards them. In order to identify factors that contribute to the formation of students' attitudes, this study presents the development and validation of widely used computer attitude scale (CAS) especially designed for accounting information systems students. Base on CAS used by Selwyn (1997), this paper's 6-point scale consists of factors such as self-confidence

in previous knowledge, hardware usage anxiety, computer engagement, fears of long-lasting negative consequences of computer use and evaluation of positive consequences of computers.

Woodrow (1992) shows that a positive computer attitude is a necessary prerequisite and an integral part of computer literacy. Kernan and Howard (1990) examine computer attitude and anxiety scales and find that computer anxiety and attitude toward computers should be treated as separate constructs. They demonstrate some evidence of the convergent validity of the computer anxiety construct but conclude that the predictive validity of computer anxiety and various computer attitudes is low. Computer anxiety has received considerable attention in the psychologically-based literature and is defined as generalized emotional distress or the tendency of an individual to be uneasy, apprehensive and/or a fear (i.e., a feeling not a belief) towards current or future use of computers (Chu and Spires 1991; Torkzadeh and Angulo 1992; Igbaria and Iivari 1995). Computer anxiety may include worries about embarrassment, looking foolish or even damaging computer equipment (McInerney et al. 1994). Research suggests that computer anxiety is relatively common among college-age undergraduate students (Lepper 1985; Pope-Davis and Vispoel 1993; Rosen and Maguire 1990). Prior studies have found that computer anxious individuals tend to show negative attitudes about using computers and exacerbate rather than cure the problem, with additional computer experiences promoting further computer avoidance. Although evidence on the effects of instruction and training on computer anxiety is mixed, there is some evidence that well-designed instruction and training can decrease computer anxiety (Rosen and Maguire 1990). Computer anxiety may be a function of individuals' prior computing experiences, attitude towards computing, perceptions of self-efficacy and expectations of success (McInerney et al. 1994).

The Technology Acceptance Model (TAM) has been used as the framework to determine whether perceived usefulness and perceived ease of use affect the acceptance of new information system. Ramayah et al. (2005) examine the effect of perceived usefulness and perceived ease of use on the IT acceptance and find that perceived usefulness is a more important determinant on IT acceptance than perceived ease of use. Aladwani (2002) reports the results of a field study that investigated the relationship among organizational actions (management advocacy and internal computing support), computer attitudes, and end-user satisfaction in public organizations. The results show that management advocacy has positive direct effects on computer attitudes and end-users satisfaction. The existence of a reliable and valid measure of self-efficacy makes assessment possible and should have implications for organizational support, training, and implementation of AIS. Wilson and Daubek (1992) investigate the computer attitudes of marketing students. Class standing, course, and the number of computer-using courses students take are found to have a positive effect on computer anxiety, computer confidence, and overall computer attitude. The results, however, show that class and course do not affect computer liking or perceptions of computer usefulness. GPA has a positive relationship to an attitude scales except computer liking. Age and gender do not appear to be related to any of the computer attitude measures evaluated.

**Self-Efficacy**

Self-efficacy as a construct has been studied in psychology for many years (Bandura 1986). It has been introduced to the IT research in the form of computer/software self-efficacy (Compeau and Higgins 1995). In an IT usage context, self-efficacy represents an individual's perceptions of his or her ability to use computers and software in the accomplishment of a task, rather than reflecting simple possession of component skills. This paper discusses the role of students' beliefs about their abilities to competently use computers and spreadsheet (computer/software self-efficacy) in the determination of computer and software use. A survey of accounting information systems students was conducted to develop and validate a measure of computer/software self-efficacy and to assess both its impacts and antecedents.

In prior research, computer self-efficacy was found to exert a significant influence on users' expectations of the outcomes of using computers, their emotional reactions to computers (affect and anxiety), as well as their actual computer use (Compeau and Higgins 1995). Studies have shown that self-efficacy is related to computer anxiety and training as well as learning performance and computer literacy (Beckers and Schmidt 2001; Chou 2001). Research also indicates that increased performance with computer related tasks was significantly related to higher levels of self-efficacy (Harrison and Rainer 1997). Havelka (2003) investigates demographic predictors of software self-efficacy among undergraduate business students. He finds that significant differences in software self-efficacy among students with different majors, amounts of computer-related experience, and computer anxiety levels. Chung and Schwager (2002) study the differences in self-efficacy among students in the business, education, forest/wildlife, and liberal arts schools of a major university. They find that, in general, business students tend to

have higher expectations from computer usage than students in the other disciplines. Most recently, Strand et al. (2003) investigate whether the self-efficacy has an effect on the performance of individuals in an unstructured accounting task such as those performed by an internal auditor. They find that the self-efficacy of accounting students, who are identified as proxies for entry-level internal auditors, seems to be improved based on the fraud-specific training they receive and articles they read. However, the knowledge-based self-efficacy do not improved performance in their study.

**Accounting Information Systems**

The objective of accounting information systems is to collect and store data about business processes that can be used to generate a meaningful output for decision makers. Many economics events are now being captured, measured, recognized, and reported electronically, without any paper documentation; and online, real-time accounting is emerging as the system of choice (Rezaee et al. 2000). Understanding the factors that influence an individual's use of such information technology has been a goal of information systems research since the mid-1970s, when organizations and researchers began to find that adoption of new technology was not living up to expectations. The Cohen Commission suggested that "one of the causes of the discontinuity between accounting theory and practice is that students graduate from accounting programs with no understanding of the mechanics of how an accounting system operates and what the related documentation looks like" (AICPA 1978). Lack of such system knowledge can be a deterrent for accounting students in understanding the practical business functions. Many accounting professionals, therefore, opine that universities should provide this AIS training (Heagy and McMickle, 1988; Siegel and Sorensen, 1994). On the other hand, American Accounting Association Committee (AECC) identifies the design and use of information technology as a core dimension of basic accounting education (AECC 1986). Also, AECC's Position Statement #2 argues that the first course in accounting should include the principles underlying the design, integrity, and effectiveness of AI systems (AECC 1991).

The behavioral factors in IS adoption has been examined and the Theory of Reasoned Action provides theoretical background in this research area (Fishbein and Ajzen 1975). The Theory of Reasoned Action indicates that individuals would use computers if they could expect positive benefits associated with using them. This theory is still widely used today in the information systems literature and has demonstrated validity. However, there is also a growing recognition that additional explanatory variables are needed (e.g., Thompson, et al. 1991; Webster and Martocchio 1992). One such variable, examined in this research, comes from the writings of Albert Bandura and his work on Social Cognitive Theory (Bandura, 1986).

Stone et al. (1996) examine the relationships among the psychological constructs of knowledge, skill, self-efficacy, and computer anxiety in accounting education. Sangster and Mulligan (1997) find that the World Wide Web presents a new dimension in the provision of information, not just for entertainment and for business, but also for education. They reports on the integration of e-mail and the Web into a third year accounting information systems course. Brosnan (1998) examines the effect of computer anxiety and self-efficacy upon computer performance. He found that computer anxiety directly influences the number of correct responses obtained whilst self-efficacy determines how the task is attempted (namely, two procedures either accessing the data tables directly or constructing look-up table). Less anxious subjects obtained more correct responses and subjects with higher perceptions of self-efficacy used more look-up tables.

**HYPOTHESIS**

The authors argue that the better computer knowledge students have over time (T1, T2, and T3), the higher their perceived usefulness of computer system, higher computer self-efficacy, and lower computer anxiety. The theoretical model links prior computer knowledge and computer attitude to the learning of subjects and students' computer performance, mediated by computer self-efficacy and spreadsheet self-efficacy.

H1: As compared to T1, the scores for Computer Attitude, Perceived Ease of Use, Perceived Usefulness, Self-efficacy, Computer Self-efficacy, Spreadsheet Self-efficacy, and Computer Anxiety will be significantly different at T2 and T3.

[Insert Figure 1 here.]

## METHODOLOGY

For the current study, students in two Accounting Information Systems classes at a southeastern university were selected as a sample (n = 82). Three waves of data collection procedure have been done. (T1 = 40, T2 = 27, T3 = 15). Samples consist of 59.8% female, 76.8% Blacks, and 13.4% Caucasian American.

One-way ANOVA was used as a statistical analysis. In addition to subject's background information, instruments were developed and used from previous research as follows:

Computer Attitude Scale, 21 items, (Selwyn, 1997) [alpha=.82]
Perceived Usefulness Scale, 10 items, (Davis, 1989) [alphas=.96]
Perceived Ease of Use Scale, 10 items, (Davis, 1989) [alphas=.98]
GSES, 17 items, (Sherer et al, 1982) [alpha= .82]
Computer Self-efficacy, 5 items, (Stone et al. 1996) [alpha=.83]
Spreadsheet Self-efficacy, 6 items, (Stone et al. 1996) [alpha= .97]
Computer Anxiety Scale, 5 items, (Stone et al. 1996) [alpha= .89]

## RESULTS

Table 1. Results of the ANOVA at Time 1, Time 2, and Time 3, (n = 82).

| Variable | T1 | T2 | T3 |
|---|---|---|---|
| Computer Attitude* | 84.55 | 101.29 | 105.33 |
| General Self-efficacy* | 53.15 | 70.81 | 72.73 |
| Perceived Usefulness* | 15.55 | 33.59 | 34.73 |
| Perceived Ease of Use* | 16.3 | 30.70 | 33.00 |
| Computer Self-efficacy* | 18.05 | 31.40 | 32.06 |
| Spreadsheet Self-efficacy* | 19.47 | 32.48 | 35.13 |
| Computer Anxiety* | 7.45 | 9.11 | 16.66 |

* Significant at the .05 level; T1: n=40; T2: n=27; T3: n=15

## CONCLUSIONS

When compared to T1, all scores significant. However, the results are different at Time 2, except for Computer Anxiety. At each Time period, higher scores were observed for the constructs. Computer Anxiety scores increased at each time period.

This results imply that the importance of software-specific training to students. Particularly, in Accounting Information System class, computer anxiety also increased over time though learning occurred. Therefore, instructors are encouraged to explore some ways to reduce students' computer anxiety.

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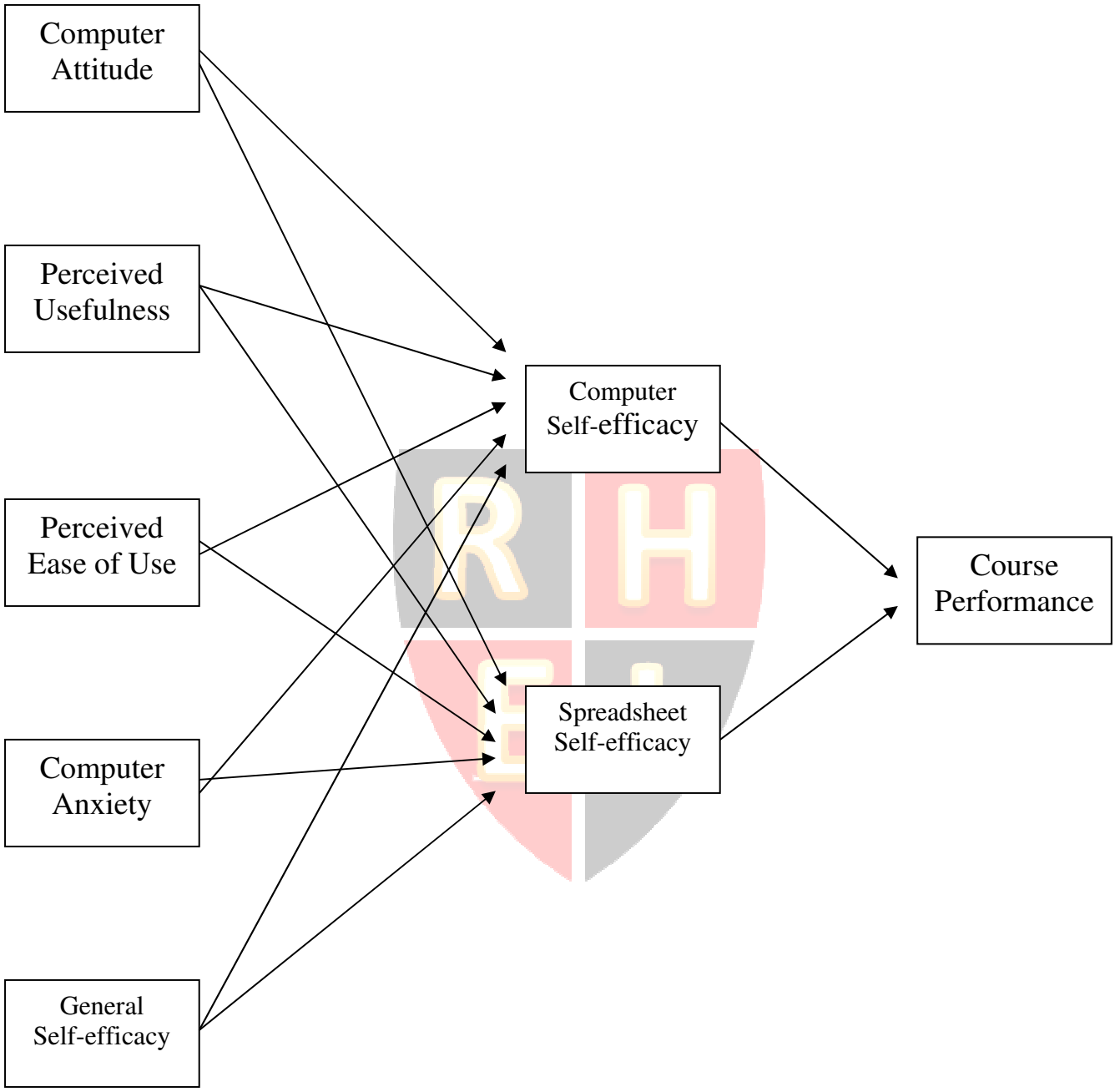
Figure 1. Path Analysis of Research Models



# The effects of beliefs about language learning and learning strategy use of junior high school EFL learners in remote districts

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**ABSTRACT**

The present study used the Beliefs about Language Learning Inventory (BALLI) and the Strategy Inventory for Language Learning (SILL) to investigate a sample of 250 Taiwanese remote junior high school EFL learners' language learning beliefs, their learning strategies, and the relationship between learners' beliefs and their use of strategies. Additionally, the study examined if learner variables would influence learners' language learning beliefs and their language learning strategies. The results revealed that the participants in the present study endorsed various beliefs and language learning strategies and a moderate correlation was found between them. Pearson Correlation revealed a moderate, significant relation not only in overall BALLI and SILL, but also in each pair of subcategories. Learner variables influenced language learning beliefs and strategies in uneven ways. In terms of gender, female students had higher means in the BALLI and the SILL. However, the results of *t*-test indicated that gender had a significant influence only upon participants' beliefs about language learning. By contrast, learners with extracurricular English learning had higher means in both the BALLI and the SILL, and an independent *t*-test confirmed this significant difference. Further, the participants' length of time learning English influenced their beliefs about English learning and their use of English learning strategies; the descriptive analysis indicated that participants who had longer lengths of English learning had higher means in both the BALLI and the SILL. As to the relationship between participants' beliefs and learning strategies, Pearson Correlation revealed a moderate, significant relation not only in overall BALLI and SILL, but also in each pair of subcategories.

Key words: language learning beliefs; language learning strategies; remote districts

## 1. INTRODUCTION

### 1.1 Background and Motivation

In Taiwan there is currently a salient difference in English proficiency between city and country students. Students in remote districts must cope with inferior learning environments caused by a lack of facilities for language teaching, financial constraints, and a lack of English teachers (Lin, 2004). These problems have prompted the formation of compensating policies by the Ministry of Education, which is trying to improve English teaching and learning in remote districts. For example, the Ministry of Education is recruiting local and foreign English teachers to teach English in remote districts, calling for college students to do extracurricular English teaching in remote districts, holding summer camps for English learning for students in remote areas and holding in-service teacher English education for teachers in remote areas.

However, the year level at which English is introduced in elementary schools is not consistent. Some urban schools start the English curriculum in first grade, and some may begin in third grade, but most remote elementary schools begin English in fifth grade. Many scholars believe that this is causing the gap in English proficiency between city and country to become bigger and bigger (Lin, 2004; Shen, 2001).

In this inferior environment, students in remote areas may have formed some erroneous beliefs about language learning. As Horwitz (1987) stated, second language learners often hold different beliefs or notions about language learning, some of which are influenced by students' previous experiences as language learners, and others that are shaped by their own cultural backgrounds. In her review of representative studies based on her questionnaire, BALLI (Beliefs about Language Learning Inventory), she further claims that individual differences, such as age, stage of life, learning style, educational experiences, and learning circumstances, including instructional levels, family, language learning contexts, likely account for as much variation as cultural differences (Horwitz, 1999). Based on the assumption that individual differences and learning circumstances likely account for as much

variation as cultural differences, the researcher decided to conduct the present study to investigate and understand the students in remote districts' beliefs about language learning.

Research on beliefs about language learning also has proven that learners' beliefs may have the potential to influence both their experiences and actions as language learners, and there are links between beliefs, motivation, and strategy use (Abraham and Vann, 1987; Horwitz, 1988, 1999; Wenden 1986a, 1987; Yang, 1999).

As to the research on relationships between learner beliefs and language learning strategies, many researchers have provided direct or indirect evidences on the connection between these two variables. Wenden (1986a) found that students could not only distinctly describe their beliefs about language learning but also adopt consistent learning strategies, and she also indicated that these learners' explicit beliefs about how best to learn a language seemed to provide the logic for their choice of learning strategies. Horwitz (1988) argued that some preconceived beliefs are likely to restrict learners' range of strategy use. Abraham and Vann (1987) also suggested that learner's beliefs about how language operates and, consequently, how it is learned may affect the variety and flexibility of strategy use.

In Taiwan, Yang (1992) studied the relationship between Taiwanese university students' beliefs and learning strategy use and Liu (2004) conducted a similar study on senior high school students. They both found that subjects in their studies generally endorsed the concept of foreign language aptitude and most of them were optimistic and highly motivated about learning English.

However, these correlation studies were mainly carried out on college and senior high school students. There are few studies conducted at the junior high school level. This reason also encourages the researchers to conduct the present study to investigate the relationship between beliefs about language learning and the use of learning strategies in junior high school English as a foreign language (EFL) learners in remote districts.

### 1.2 Research Questions

More specifically, the present study focused on four research questions:

1. What are the beliefs about English learning held by junior high school EFL learners in remote districts?
2. What learning strategies do junior high school EFL learners in remote districts prefer to use?
3. Do learner variables (gender, extracurricular English learning and length of time learning English) influence the learners' beliefs about English learning and their use of English learning strategies?
4. What is the relationship between the beliefs about language learning held by junior high school EFL learners in remote districts and their use of learning strategies?

## 2 METHODOLOGY

### 2.1 The Characteristics of the Subjects

The researchers conducted a survey at four remote junior high schools which were randomly selected from remote junior high schools in Pingtung and Kaohsiung County. Moreover, three classes of each school were randomly selected from seventh, eighth and ninth grade. As the result, there were 317 EFL learners participated in the present study. After receiving 317 questionnaires, the researchers discarded 67 invalid questionnaires which were either incomplete or failed to follow the instructions of the questionnaire. Accordingly, the valid response rate was 78 % and a total of 250 questionnaires were identified as valid data for statistical analysis in the present study.

### 2.2 The Instruments of the Study

The present study employed quantitative research methods. The instruments for data collection included a survey of three sets of questionnaires: background questionnaire, the Beliefs about Language Learning Inventory (BALLI) (Horwitz, 1987) and the Strategy Inventory for Language Learning questionnaire (SILL) version 7.0 (Oxford, 1990).

### 2.3 The Method of Data Analysis

The statistical procedures utilized in the present study were operated by means of the SPSS program, including descriptive statistics, independent *t*-test, one-way ANOVA, the Scheffe post-hoc test and Pearson product-moment correlation. Moreover, the statistical significance was set on the level of .05 for all statistical procedures.

## 3 CONCLUSIONS

### 3.1 Results and Discussions

**Research Question 1: What are the beliefs about English learning held by junior high school EFL learners in remote districts?**

Based on the result of descriptive statistics, present study indicated that participants held various beliefs about language learning. Among five subcategories of BALLI, the beliefs of "Motivation" ($M$ = 3.79, $SD$ = 0.72) were the strongest belief followed by "Nature of Language Learning" ($M$ = 3.40, $SD$ = 0.57), "Difficulty of Language Learning" ($M$ = 3.41, $SD$ = 0.51), "Communication Strategies" ($M$ = 3.40, $SD$ = 0.48) and Foreign Language Aptitude" ($M$ = 3.28, $SD$ = 0.46). In other words, the results indicated that participants in present study generally believe that motivation is the strongest factor influencing the success of their English language learning.

The first category of the BALLI, "Foreign Language Aptitude", concerns the general existence of special ability for language learning and beliefs about the characteristics of successful language learners. In the present study, 44% of the participants agreed or strongly agreed that language learning required a special ability while about one third of the participants (32%) indicated neutral and 24% of participants disagreed or strongly disagreed with the concept. This result was in line with previous research showing that Taiwanese EFL learners endorsed the concept of language aptitude (Yang, 1999; Liu, 2004).

The second category, "Difficulty of Language Learning", concerns the general difficulty of learning a foreign language. In the present study, 46% of the participants agreed or strongly agreed that there was a hierarchy of language difficulty while 36% of participants stayed neutral and only 18% of participant disagreed or strongly disagreed. The finding was in accordance with previous studies that Taiwanese EFL learners generally accepted the concept of language a difficulty hierarchy (Yang, 1999; Liu, 2004).

The third category, "Nature of Language Learning", concerns relevant issues related to the nature of language learning process. The result indicated that nearly half of the participants (49%) endorsed various opinions about language learning while 35% of participants neither agreed nor disagreed, and only 16% of the participants disagreed or strongly disagreed. The current study revealed that EFL learners in remote school hold various opinions about the nature of language learning which was consistent with either in Taiwan and other countries. (Abraham and Vann, 1987; Horwitz, 1988, 1999; Liu, 2004; Wenden 1986a, 1987a; Yang, 1999).

The fourth category, "Learning and Communication Strategies", refers to various strategies learners use to master a second or foreign language. The result showed that nearly half of the participants (48%) believed in the use of various types of strategies while more than one third (35%) of the participants expressed no opinion and 21% of the participants neither disagreed nor strongly disagreed with the concept. Again, this finding was generally consistent with previous studies, which showed that Taiwanese EFL learners possessed various thoughts about how to learn English (Yang, 1999; Liu, 2004).

The last category, "Motivation", concerns the desire and expectation for language learning opportunities. The result indicated that more than a half of the participants (59%) expressed the motivation for learning English while one third indicated no opinion, and only 10% of the participants disagreed or strongly disagreed the desire. Generally, this is consistent with previous studies that Taiwanese EFL learners were optimistic about learning English (Yang, 1999; Liu, 2004).

Overall, the findings of the present study were generally consistent with previous research efforts. However, as prior studies have suggested, possible conflicts may exist in learners' beliefs, which could weaken claims of robust data linkages. For example, a student who believes that everyone can learn to speak a foreign language may not believe that he has foreign language aptitude. As a result, he might blame his failure on his talent, not his efforts. Thus, teachers and educators should try to help their students clarify such conflicts in their beliefs by encouraging a healthy learning attitude.

**Research Question 2: What learning strategies are preferred by junior high school EFL learners in remote districts?**

The result of descriptive statistics showed that the participants in the present study were at medium level of learning strategy usage ($M$ = 3.06, $SD$ = 0.67). Moreover, the descriptive analysis found that compensation strategies were most frequently used strategies ($M$ = 3.14, $SD$ = 0.78) followed by cognitive strategies ($M$ =3.13, $SD$ = 0.77), memory strategies ($M$ = 3.08, $SD$ = 0.73), affective strategies ($M$ =3.05, $SD$ = 0.81), social strategies ($M$ =2.94, $SD$ = 0.87) and metacognitive strategies ($M$ =2.90, $SD$ = 0.83). In other words, the participants in this study preferred to

employ compensation strategies for their English learning most frequently, which was also consistent with previous studies (Chang, 2003; Liu, 2004) while they seemed to use metacognitive strategies the least often.

**Research Question3: Do learner variables (gender, extracurricular English learning and length of time learning English) have significant difference in learners' beliefs about English learning and their use of English learning strategies?**

Based on the result of descriptive statistics, the present study found that female learners had higher means than male learners in both the BALLI and the SILL (See Table1). In other words, female learners generally had stronger overall beliefs and a higher frequency of overall strategy use. However, a significant difference between female and male learners was only found in overall beliefs about language learning.

When the five subcategories of the BALLI were examined, female learners had higher means in all subcategories. However, only the subcategory, "Motivation", achieved the significant difference level in *t*-test. In six subcategories of the SILL, female learners had higher means in five of six subcategories: memory, cognitive, metacognitive, affective and social strategies. Moreover, no significant difference was found in *t*-test (See Table1).

**Table 1 Summary of descriptive statistics and *t*-test results on the BALLI and the SILL for male and female learners**

| | Male (*n*=105) | | Female(*n*=145) | | | |
|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *t* | *p* |
| Aptitude | 3.23 | 0.45 | 3.31 | 0.46 | 1.366 | .173 |
| Difficulty | 3.34 | 0.53 | 3.46 | 0.49 | 1.803 | .073 |
| Nature | 3.45 | 0.50 | 3.49 | 0.61 | 0.646 | .519 |
| Learning | 3.37 | 0.42 | 3.42 | 0.51 | 1.025 | .306 |
| Motivations | 3.61 | 0.76 | 3.93 | 0.68 | 3.412 | .001* |
| BALLI | 3.38 | 0.39 | 3.48 | 0.40 | 2.209 | .028* |
| Memory | 2.90 | 0.69 | 2.94 | 0.75 | 0.431 | .667 |
| Cognitive | 2.85 | 0.71 | 2.89 | 0.81 | 0.466 | .642 |
| Compensation | 2.91 | 0.71 | 2.83 | 0.82 | 0.834 | .405 |
| Metacognitive | 3.06 | 0.79 | 3.14 | 0.88 | 0.790 | .431 |
| Affective | 2.92 | 0.76 | 2.97 | 0.85 | 0.536 | .592 |
| Social | 3.00 | 0.77 | 3.10 | 0.93 | 0.816 | .415 |
| SILL | 2.93 | 0.62 | 2.97 | 0.72 | 0.504 | .614 |

* p<.05

In brief, although female learners generally had stronger overall beliefs about language learning and higher frequency of language learning strategy use than male learners, a significant difference was only found in the overall beliefs about language learning and motivation. This finding was generally consistent with other gender correlations in research (Siebert, 2003, Oxford & Nyikos 1989). Siebert found a number of significant belief differences among males and females in relation to language learning and strategy use, while Oxford & Nyikos clamed that female learners, compared with their male counterparts, used a wider range of strategies.

As for the next individual difference variable, the amount of learners' extracurricular English learning, the descriptive analysis showed that learners who had received extra English instruction had higher means in both overall beliefs about language learning and language learning strategies. Moreover, the independent *t*-test showed significant difference in both the BALLI $t(248) = 2.03$, $p = .044$ (two-tailed) and the SILL, $t(248) = 3.51$, $p = .044$ (two-tailed). After analyzing each subcategory of the BALLI, the results showed that learners who had experience of receiving extracurricular English learning had higher means in all subcategories. Additionally, significant differences were found in the two subcategories dealing with language learning difficulty and motivation.

In terms of the SILL, the results revealed that learners who had experience of receiving extracurricular English learning had greater means in all subcategories. Moreover, significant differences were found in five of six subcategories: Memory strategy, $t(248) = 2.757$, $p = .006$ (two-tailed) , Cognitive strategy, $t(248) = 4.116$, $p = .000$ (two-tailed) , Metacognitive strategy, $t(248) = 3.291$, $p = .001$ (two-tailed), Affective strategy, $t(248) = 2.298$, $p = .028$ (two-tailed) and Social strategy, $t(248) = 2.347$, $p = .020$ (two-tailed).

Evidently, learners who have had extracurricular English study show significant differences in overall beliefs about English learning, language learning difficulty, motivation, and in their overall use of language learning strategies. This correlation supports Horwitz's (1999) assumption that individual differences and learning

circumstances likely account for as much variation as cultural differences and Rubin's (1975) assumption that strategy uses vary with the task, learning stage, age, context, individual styles, and cultural differences.

The last individual difference variable to be considered was the length of learners' English learning and its effect upon their beliefs about English learning as well as their use of English learning strategies. In the present study, the descriptive analysis indicated that learners who had studied English for a longer period of time held stronger beliefs about language learning and reported a higher frequency of language strategy use. Additionally, the results of one-way ANOVA and the Scheffe post-hoc test illustrated a significant difference in overall the BALLI, $F(4, 246)= 3.218$, $p = .014$. However, no significance was found in the SILL. The result of Scheffe post-hoc test indicated that there was a significant difference between two groups: "More than one year, but less than three years" and "More than five years, but less than seven years". In other words, the participants who had studied English more than five years, but less than seven years had significantly stronger beliefs than participants who had studied English more than one year, but less than three years. These findings are consistent with Rifkin's (2000) 3-year BALLI study in which she found that the level of language instruction played a role in shaping learner's beliefs and Oxford and Nyikos' (1989) study in which students with more years of language study tended to use strategies more often that less experienced students.

**Research Question 4: What is the relationship between the beliefs about language learning held by junior high school EFL learners in remote districts and their use of learning strategies?**

Based on the result of Pearson correlation, the current study displays a moderate association ($r = 0.444$, $p = .000$) between participants' beliefs about language learning and their use of learning strategies. When each subcategory of the BALLI and the SILL, was examined the result of Pearson correlation also indicated a significant linkage in each subcategory of the BALLI and the SILL. Among these significant correlations, the first subcategory in the BALLI, "Foreign Language Aptitude", had the strongest relationship with compensation strategy ($r = .231$, $p = .000$). The second subcategory in the BALLI, "Difficulty of Language Learning", had the highest correlation with memory($r = .427$, $p = .000$), cognitive and affective strategy ($r = .387$, $p = .000$). The last subcategory in the BALLI, motivation, had the most notable correlation with overall SILL($r = 0.422$, $p = .000$) and three SILL subcategories: cognitive strategy($r = .387$, $p = .000$), metacognitive ($r = .455$, $p = .000$), social strategies($r = .340$, $p = .000$).

In summary, based on the result of Pearson correlation, the present study found that there was a moderate relationship between participants' beliefs about language learning and their use of learning strategies. Further, learners who endorsed the beliefs of foreign language aptitude seemed to use compensation strategies most often, while learners who believed in a hierarchy of language learning seemed to use memory, cognitive and affective strategies most frequently. Finally, the current study's data revealed that learners who had motivation for language learning seemed to use language learning strategies, specifically cognitive, metacognitive and social ones, most often. This moderate relationship between participants' beliefs about language learning and their use of learning strategies accords with prior research; Abraham and Vann (1897), Horwitz (1987, 1988), Liu (2004), Wenden (1986a, 1986b, 1987), and Yang, (1999) have all established possible links between learners' beliefs about language learning and the effects of these beliefs upon learning strategy usage.

### 3.2 Pedagogical Implications

According to the results of present study, four pedagogical implications were provided. Firstly, with better understanding of the beliefs about language learning held by junior high school EFL learners in remote districts, and their use of learning strategies, teachers and educators can better understand the situation of rural EFL learners. Moreover, by encouraging appropriate beliefs and providing effective instruction of learning strategies according to learners' situation, teachers and educators can teach English more effectively.

Secondly, in order to understand learners' beliefs about language learning and their preference of learning strategies in the process of English learning, some materials and methods can be used in their regular curriculum. For example, the use of the BALLI and the SILL in classrooms not only could help teachers gather the information of learners' beliefs and their use of strategies, but also could help learners promote their awareness of their existing language learning beliefs and learning strategies. Moreover, methods like classroom observation, diary keeping, questionnaires (such as the BALLI and the SILL), interviews, and group discussions are useful for teachers and educators to understand learners' beliefs and their use of strategy systematically.

Thirdly, students in Taiwan need to memorize a lot of information to pass many exams, thus effective use of memory strategy is especial important (Chen, 2000). However, previous studies, including the present one, found

that memory strategies have been lacking and not used effectively. Thus, teachers and educators can integrate the training of memory strategy more often into their regular instruction.

Finally, the present study found significant a relationship between beliefs and strategy use. Teachers and educators should try to help students develop positive beliefs that lead to effective learning strategy use and minimize negative beliefs that might hinder learning. For example, teachers and educators can remove learners' misconceptions by providing knowledge or illustrations concerning the nature and process of language acquisition (Yang, 1998).

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# Why states should require a teaching performance assessment and a subject matter assessment for a preliminary teaching credential

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**ABSTRACT**

During the past decade Federal and state public policy makers have considered mandating passing of a subject matter teacher licensure assessment and a teaching performance assessment as a pre-requisite for a teaching credential. Today, a subject matter teacher licensing assessment early in a teacher's career, is required in six states as a way to meet Federal mandates requiring states to train highly qualified teachers (HQT) under No Child Left Behind (NCLB). Teacher licensure assessment standards in the six states requiring a teacher licensure assessment will be compared with the standards of a teaching performance assessment to determine if a teaching performance assessment should be included in a teacher credentialing program purporting to train HQT beginning teachers. California requires both a subject matter teacher licensure assessment and a teaching performance assessment for a preliminary teaching credential.

Data from the first eighteen after implementing a teaching performance assessment into one of California's single largest teacher preparation programs will be analyzed to document the effects of implementing a teaching performance assessment into a teacher credentialing program. Candidate pass/failure rates will also be reported.. This paper discusses the question: Should states incorporate both a subject matter teacher licensure assessment and a teaching performance assessment to meet the requirements of NCLB and the training of highly qualified beginning teachers?

Key words: High Qualified Teachers, teacher licensure assessment, Teaching Performance Assessment (TPA), California Teaching Performance Assessment (CalTPA), California Teaching Performance Expectations (TPE), California Standards for the Teaching Profession, teacher licensure assessment, preliminary teaching credential.

## INTRODUCTION

For the past three decades urban school districts have faced continuing teacher shortages. State and national political rhetoric has shifted from general discussions of statements of what constitutes a highly qualified teacher to specific discussions of what newly credentialed teachers should know and be able to do. This discussion has intensified during the past eight years coupled with the most intensive development in American history of educational policy intended to address issues of teacher quality (White, M., Makkonen, R., and Stewart, K., 2009). Coupled with a national call to raise standards in teacher preparation and licensure programs, researchers began to discuss a link the between the importance of teacher knowledge and student achievement. Several reports including, *The Nation at Risk,* the Holmes Group; John Goodland's National Network for Educational Renewal; the Renaissance Group; the Project 30 Alliance, The National Commission on Teaching and America's Future, The National Board for Professional Teaching; and the National Council for Accreditation of Teacher Education were critical of teacher education institutions and recommended more rigorous and measurable teacher credential candidate standards, higher teaching expectations including academic performance, and explicit calls for teacher preparation programs to be evaluated partially by how well their graduates meet performance standards (Hitz, 2008).

## TEACHER ASSESSMENT PROGRAMS

### National Reports Allege Teacher Credential Programs Fail To Train Highly Qualified Beginning Teachers

During the decade of the 1990's teacher credential programs have emphasized performance standards for teacher credential programs. Ferguson (1991) supplied data that supported the notion that teacher's experience-as measured by scores on a licensing examination, master's degrees, and experience-accounted for about 40% of the measured variance in student reading and mathematics in grades 1-11. Ferguson also asserted that after controlling for economic status, the large disparities in achievement between black and white students were almost entirely accounted for by differences in the qualifications of their teachers. The notion of raising teacher performance

standards continued to be fueled by recommendations of the National Board for Professional Teaching Standards (NBPTS), the Interstate New Teacher Assessment and Support Consortium (INTASC), and the performance-based standards of the National Council for Accreditation of Teacher Education (NCATE) (Hitz, 2008).
In 1996 a report from the National Commission on Teaching and America's Future was published with the following challenge; "By the year 2006, America will provide every student with what should be his or her educational birthright: access to competent, caring and qualified teaching" (Darling-Hammond 1996, p. 1). The report further documented the relationship between student achievement and teacher skills by stressing what teachers know and can do is crucial to what students learn (National Committee on Teaching and America's Future, 1996). Similar findings were reported by Darling-Hammond & Bell (1995; 1997); Darling-Hammond (1995, 1997); and Honawar (2008). These and other results continued to support the contention that a highly qualified teacher possesses the ability to raise student achievement. Unfortunately for districts, few states achieved this standard.

Elmore (2002) suggests that the knowledge, skills and abilities necessary for what a teacher should know and do reside in three domains: (1) deep knowledge of the subject matter (e.g., math, science, history-social science) and skills (e.g., reading and writing) that are to be taught; (2) expertise in instructional practices that cut across specific subject area, or general pedagogical knowledge: and (3) expertise in instructional practices that address the problems of teaching and learning associated with specific studies and bodies of knowledge, referred to as pedagogical content knowledge (p.17). According to the California Commission on Teacher on Teacher Credentialing (CTC), the California Standards for the Teaching Profession and the Teaching Performance Expectations denote what a successful beginning teacher should know and be able to do (California Commission on Teacher Credentialing, 2008). Reports at the beginning of the 21st century examined the effect of licensure testing on the demographic and academic characteristic of prospective teachers. It has long been held that state licensure assessments restrict the overall pool of candidates as teacher licensure assessment attempt to ensure uniform expectations of beginning teacher quality (ETS, 2007)

**No Child Left Behind**

Through authorization of the Higher Education Act, Congress imposed reporting regulations on all schools and colleges of education through Title II as an attempt to ensure the quality of teacher education programs. Using data from the Title II requirements, the U.S. Department of Education issued a report titled, Meeting the Highly Qualified Teachers Challenge: The Secretary's Annual Report on Teacher Quality. The data collected for this report suggested that schools of education and formal teacher training programs were failing to produce the types of highly qualified teachers that the NCLB Act, demands. The report continued to question the value students receive from attending schools of education and recommended the implementation of alternative teacher education programs and streamlining teacher certification through alternative routes (Hitz, 2008). The NCLB provisions included the HQT provision mandating that all students were to be taught by teachers who not only were licensed by whom and demonstrated competencies in subject matter that they taught. Hence, every teacher education program required multiple and single subject competency testing. Since only those who pass subject matter tests are eligible to teach in public schools. Annually, one hundred percent of credential candidates have successfully passed subject matter competency tests (ETS, 2007).

**State Credentialing, No Child Left Behind, and Teacher Licensure Assessment**

Under No Child Left Behind (NCLB) legislation, states have gained greater flexibility in how they use federal education funds, how teachers are credentialed, and the reduction or revision of licensure requirements (U.S. Department of Education, 2002). Responding to NCLB's call for developing alternative certification and the reduction, revision, or elimination of licensure requirements, several alternative teacher preparation programs have been developed and implemented. Notable alternative teacher credentialing programs include; Teach for America and the teaching residencies of Chicago's Academy for Urban School Leadership (AUSL), the Boston Teacher Residency Program, and the Boettcher Teachers Program in Denver (Darling-Hammond, 2008).

Federal policies have mandated reporting of state and institutional data on teacher candidates and that all teachers meet state requirements for being highly qualified in the subjects that they teach (ETS, 2007). The Council of State School Office (CSSO) recommends beginning teacher performance testing in the areas of content knowledge, teaching knowledge, and an assessment of actual teaching (CCSS, 2009).

These reports confirm that Federal and state public policy makers continue to consider mandate the successful passing of a teacher licensing assessment, in addition to content knowledge, as a pre-requisite for a

preliminary teaching credential. Today, a teaching performance assessment is required in six states to comply with Federal mandates requiring teacher preparation institutions to train high quality beginning teachers under NCLB.

**Teacher Licensure Assessments Recommended By National Reports**

A shift in policy toward teacher licensure assessment was supported by a report released by the Council of Chief State School Office (CCSSO), recommending a supports for what state officials need and want in new assessments for the licensing of teachers. The report supports efforts to bring together the resources of business and education to help build a complete new system of teacher licensure. "The new imperative is that students need 21st century skills because the world has changed" (p. 4.) To accomplish this change, the report recommends building of a new system of teacher licensure. The report recommends four areas of reform of teacher licensure. Initially, states need identify a common core of student standards to support the development of a framework of skills and competencies needed for 21st century student success. Second, states need to refine and expand data reporting systems between Federal and state agencies. Third, states need to continue to explore and rethink about what supports students will need for student learning in the 21st century particularly online and virtual models. Finally, the report recommends the development of an educator support system that begins from when candidates first consider becoming teachers through retirement. Implementation of CCSSO recommendations forms the framework for building a new system of teacher licensure for the 21st century (CCSSO, 2008).

In support of teacher licensure reform, CCSSO outlines key areas of knowledge and skills teachers need for the 21st century learning environment. They include moving from lecture to engagement, scaffolding cognitive learning, building meta-cognitive skills including a focus on high quality intellectual skills, using effective formative assessment and nurturing reflective practice (CCSSO, 2008). In addition CCSSO recommended several other areas of preparation including technology literacy, helping students to appreciate different perspectives across different cultures, and situations including strategies for teaching English Language Learners, students with disabilities and students from lower socio-economic backgrounds. Collaboration skills and global awareness are the final two knowledge and skills teachers need for the 21st century (CCSSO, 2008).

The CCSSO supports the inclusion of a teacher licensure assessment as a continuing assessment for beginning and experienced teachers. The focus of this paper is the licensure of beginning teacher credential candidates. The teacher licensure recommendations of CCSSO form+ key design principles of a new system of beginning teacher licensure assessment. The Council of Chief State Officers recommendation that beginning teacher assessment include, measures of literacy/numeracy, content, pedagogy, actual classroom performance, teacher dispositions including flexibility, cross cultural skills, leadership and collaboration (CCSSO, 2008). The Interstate New Teacher Assessment and Support Consortium Test of Teaching Knowledge (TTK) was developed to test a beginning teacher's ability to meet the INTASC model core standards, considered essential for competent teaching access a beginning teacher's professional knowledge in areas including theories of teaching and learning, cognitive, social and physical development, diagnostic, and evaluative assessments, language acquisition, the role of student background in the learning process and other foundational knowledge and skills essential to the profession of teaching. The INTASC recommendations for beginning teachers recommends that a candidate pass at least three licensing tests before they are issued a permanent license, instead of a requirement for an initial or provisional license. Theses three tests include: (1) a test of content knowledge (math, science, etc), (b) a test of teaching knowledge (pedagogy, etc), and (3) an assessment of actual teaching. The first two tests on content and teaching knowledge are recommended by the state at the end of formal preparation prior to receiving a provisional license covering the first few years of teaching, The third test, is to be used at the end of the first of second year of teaching and will be the final evidence to issue an ongoing or permanent license CCSSO, 2009). An important component of teacher licensure according to CCSSO is providing feedback to candidates who do not pass the licensing assessment so that they know where to focus their remedial efforts (CCSSO, 2008, p. 5).

**Status of Teacher Licensure Assessment**

In response to NCLB, in 1998, six states, California, Florida, Illinois, North Carolina, Ohio, and Texas have passed legislation requiring all teachers demonstrate a knowledge of state teaching standards (White, Makkonen, & Stewart, 2008). In addition to a subject matter test, the California legislature mandated an additional teaching performance assessment that was approved by the Commission on Teacher Credentialing (CTC). Implementation of a teaching performance assessment was delayed by the Commission in 2003 in response to requests received from the Legislature and others during the state's financial crisis at that time. Senate Bill 1209 (Chapter 517, Statutes of 2006), however, mandated the implementation of a TPA requirement for all multiple and

single subject professional teacher preparation programs beginning July 1, 2008. The Commission took action in December 2006 to require that any candidate who began a teacher preparation program on or after July 1, 2008 must pass a TPA prior to recommendation for a credential (White, Makkonen, & Stewart, 2009; CTC, 2008).

Today, California universities offering a teacher credential programs are mandated by the State Legislature to implement a TPA. Three Commission approved TPAs include the California Teaching Performance Assessment (CalTPA), the Performance Assessment for California Teachers (PACT), and the Fresno Assessment of Student Teachers (FAST). Assessments of teaching performance are designed to measure a candidate's knowledge, skills and ability with relation to California's Teaching Performance Expectations (TPEs), including demonstrating their ability to appropriately instruct all K-12 students in the Student Academic Content Standards. Each of the three approved teaching performance assessment models requires a candidate to complete defined tasks relating to subject-specific pedagogy, designing and implementing instruction and student assessment, and a culminating teaching experience or event. When taken as a whole, teaching performance assessment tasks/activities measure knowledge the TPEs. Candidate performances are scored by trained assessors against one or more rubrics that describe levels of performance relative to each task/activity. The CalTPA is the California Commission on Teacher Credentialing model and consists of performance tasks and the Culminating Teaching Experience. The PACT was developed by Stanford University and a consortium of public and private institutions of higher education. It consists of Embedded Signature Assignments (ESA's) and the Teaching Event. The Fresno Assessment of Student Teachers (FAST) is a state-approved TPA system designed for use at California State University, Fresno. FAST assesses the pedagogical competence of teacher candidates, including interns, with respect to the 13 TPEs and the Teaching Sample Project. The three approved CTC assessments measure a candidate's knowledge, skills and understanding of California's TPE's except for TPA 12 (Professional, Legal, and Ethical Obligations) in the CALTPA, which is measured within the teacher preparation program. In sum teaching performance assessments provide candidates with a series of performance tasks, each of which increase in complexity. The tasks are embedded within the teacher preparation program sequence and are both administered and scored by program sponsors. (CTC, 2009).

**Rationale for Including A Teaching Performance Assessment As a Requirement For A Preliminary Teaching Credential**

In California The CalTPA, the PACT, and the FAST were developed as an outcome of. Senate Bill 1209 (Chap. 517, Statutes of 2006) that mandates the statewide implementation of a TPA (CTC 2008). The purpose of a TPA is to sustain high quality standards for the preparation and teaching performance of credential candidates by: (1) assuring that all students recommended for a preliminary multiple or single subject teaching credential demonstrate a satisfactory level of mastery of the California TPE's, (2) using TPA results as an indication of program effectiveness; (3) providing candidates a way to judge their progress and needs with their teacher preparation program; (4) providing evidence of a candidate's development for use in an induction program and (5) meeting the requirements specified in Senate Bill (SB) 1209 (chapter 517, Statutes of 2006) concerning the state wide implementation of a TPA (CTC, 2006, CTC 2008). The California TPE's incorporated are described below.

California Teaching Performance Expectations (TPE)

A. Making subject matter comprehensive to students

TPE 1: Specific Pedagogical Skills for Subject Matter Instruction
- a. Subject-specific Pedagogical Skills for Multiple Subject Teaching Assignments
- b. Subject-Specific Pedagogical Skills for Single Subject Teaching

B. Assessing Student Learning

TPE 2: Monitoring Student Learning During Instruction
TPE 3: Interpretation and Use of Assessments

C. Engaging and Supporting Students in Learning

TPE 4: Making Content Accessible
TPE 5: Student Engagement
TPE 6: Developing Appropriate Teaching Practices
- a. Developmentally Appropriate Practices in Grades K-3
- b. Developmentally Appropriate Practices in Grades 4-8
- c. Developmentally Appropriate Practices in Grades 9-12

TPE 7: Teaching English Learners

D. Planning Instruction and Designing Learning Experiences for Students

TPE 8: Learning about Students
TPE 9: Instructional Planning

E. Creating and Maintaining Effective Environments For Student learning

TPE 10: Instructional Time
TPE 11: Social Environment

F. Developing as a Professional Educator

TPE 12: Professional, Legal and Ethical Obligations
TPE 13: Professional Growth (CTC, 2006)

For California teacher credential candidates to successful meet the requirements of a TPA, teacher credentialing programs will need to continue to tailor credential programs focusing on a candidate's ability to make teaching decisions based on intentional cognitive decisions supported by research-based rationale. Intentional cognitive decisions include a number of teaching decisions teachers use to match learning of subject matter to preferred student learning patterns. Students enrolled in teacher credentialing programs should receive practice in teaching for student success by designing, teaching, and assessing multiple ways to present lessons (Sternberg, Torff & Grigorenko, 1998; Sternberg, 2002). Examples of intentional cognitive reflections include reflection on decisions about: (1) instructional design; (2) subject matter pedagogy; (3) designing assessment, and (4) developing comprehensive teacher competencies (Elmore, 2002).

**Incorporating a Teaching Performance Assessment Into a Teacher Credential Program**

The effect of a TPA requirement for credential candidates enrolling in a teaching credential program, in California, after July 1, 2008 effects students who: (1) enroll in a Multiple and Single Subject credential program on

or after July 1, 2008; (2) are currently enrolled in a Multiple or Single Subject credential program that have not completed a course towards this program before July 1, 2008; and (3) have discontinued their multiple or single subject credential program for 12 months or more and have not successful completed an academic course, if re-enrolled into their program on or after July 1, 2008 (National University, 2008). Major concerns a university teacher credentialing program will have to consider when implementing a TPA include: (1) organizing faculty review of foundations, methodological, and clinical teacher program syllabi for embedded TPEs; (2) TPA training for faculty-student advising; (3) the cost of offering and scoring a TPA; (4) developing an introductory course to acquaint students in how to negotiate a TPA; and (5) providing for TPA data collection and storage of formative and summative TPA information to be used by the Commission and university for teacher credential program improvement.

**Basic Requirements for a Preliminary California Multiple or Single Subject teaching credential**

To receive a five-year California preliminary multiple or single subject teaching credential, candidates must complete the following requirements:

1. University admission requirements
2. Undergraduate: blended bachelor's degree, Graduate: bachelor's degree
3. Program coursework within seven years.
4. U.S. Constitution requirement
5. Basic skills requirement
6. Subject matter competency requirements for multiple or single subject candidates
7. Undergraduate and graduate residency requirements
8. Coursework completed within seven years
9. Undergraduate cumulative grade point of 2.5. Graduate cumulative grade point of 3.0.
10. Pass the Reading Instruction Competence Assessment (RICA).
11 Written evaluations of performance in field experiences, internships, educational projects, students teaching and other practicum
13. Pass all four tasks of the CALTPA
14. CPR certification
15. BCLAD only-verification of passing scores on oral and written language proficiency examinations
16. Valid certificate of clearance or similar document
17. Fulfillment of all financial obligations to the university
18. A CTC credential application
19. Successful passing of the exit process (NU Catalog, 2010)

**Implementing a California Teaching Performance Assessment**

Prior to implementation of the CalTPA, California Institution of Higher Education discussed their proposed implementation and addressed issues and concerns raised by students and faculty. Questions included: Prior to and during implementation, does the Institution of Higher Education (IHE) welcome discussions to clarify and discuss the effect of implementation of a TPA? Has the IHE provided a convenient way for student access to a TPA as well as their assessment results? Does the IHE systematically recruit and train certified TPA assessors? Is a procedure in place for yearly calibration and re-calibration of TPA assessors? What procedures are in place for addressing assessor inter-rater reliability? Do opportunities exist for student-faculty clarification of ethical and logistical considerations of incorporating a TPA into a teacher credential program? Does the IHE have procedures in place to assist student remediation of TPA tasks? What are the student test and re-test pass rates? Finally, does the IHE have a process in place for monitoring and adjusting to new information from the Commission to meet the needs of the IHE and their students?

The California Commission for Teacher Credentialing offers assessor training in the Northern and Southern parts of California. Educators who wish to participate as an assessor can complete training for IHE assessors and become certified to assess the CalTPA. Universities need to institute procedures for yearly calibration and re-calibration of it TPA assessors. The CTC requires yearly re-calibration of assessors. National University requires this training for all university TPA assessors. In addition, National University offers additional opportunities for coached re-calibration online for assessors who fail to recalibrate annually. The California Teacher Commission

requires that each university offering a teacher credential program randomly select fifteen percent of their TPA assessments to a second assessor for assessment. Critical for university TPA assessment results are the procedures in place for addressing assessor inter-rater reliability through reassessment of fifteen percent of candidate submissions. To comply with CTC requirements, National university assesses fifteen percent of candidate submissions twice. Should two assessors not agree the lead assessor reviews candidate work, each assessor's record of evidence, and assigns a true score. National University has a procedure in place for students to take a TPA task up to three times. When a student fails to pass a task, the university lead TPA faculty receives notification from the university center for assessment to contact the student who has failed the task. Upon notification of a student failure on any of the four TPA tasks, the lead assessor contacts each candidate by telephone or email to discuss the task with the student. The lead assessor is bound by the University honor code as is the candidate to not discuss responses specific questions, but to discuss the task with the candidate in general terms. After the lead TPA faculty provides student assistance, the candidate is cleared to retake the task. A persistent question requires a university response. Are student performance and subject matter tests results a true indication of the effectiveness of a teacher credential program?

During 2010 the Commission is scheduled to post individual university pass/fail TPA score scores. To provide a mechanism for monitoring and adjusting to new information, each university will provide online services for students and faculty to monitor TPA tasks submissions and scoring, retesting of students, and calibration and recalibration of university assessors. Each California IHE offering teacher credential programs provides a TPA web site accessible for teacher candidates, lead faculty, an institutional TPA administrator, plus a lead assessor who reconciles any student or faculty submission scores.

Preparing teacher credential candidates to successfully pass a TPA will require both short and long-term program commitments by credential program providers. California institutions of higher education offering a Commission approved teacher preparation program are required to offer a TPA embedded within the course work of all credential candidates beginning July 1, 2008 (CTC 2008). The TPA measures the TPE's in multiple ways which requires universities to review of all course syllabi to ensure that the TPE's are thoroughly embedded within each course. The Commission offers assessor training to not only university faculty but to field supervisors, retired teachers and administrators, and other education professionals to certify as assessors in TPA. Every IHE must have a procedure in place for an electronic TPA student honor statement defining acceptable and unacceptable student behaviors. Each honor statement requires a student electronic signature.

**Training Highly Qualified Beginning Teachers By Incorporating A Teaching Performance Assessment**

A continuing goal of teacher credential programs is the training beginning teachers to raise achievement of all students. The problem remains-how can teachers possible raise the achievement of all students? Some students benefit by instruction they receive and other do not. Reasons some students may be hard to teach include disabilities, disorders, motivational problems, and health problems to name a few. Another reason for student failure is that some students may not benefit from instruction if there exists a mismatch between the learning patterns of some students and the particular range of methods that a teacher is using (Sternberg, 2002).

Sternberg's theory of successful intelligence supports the premise that many students who might like to study a given conventional subject area may stop because they believe that they can not succeed in studying it. They may give up or stop taking courses in particular subject areas. Sternberg (2002) defines teaching for successful intelligence as teaching a student to succeed in life, given one's own goals and environmental contexts.

Teaching for successful intelligence therefore forms not only a basis for school achievement but also achievement in life. A person is successfully intelligent to the extent that one effectively adapts to, shapes, and selects environments, as appropriate to their individual circumstances. To achieve success, students have three choices. They can adapt to fit the environment, they can modify the environment to fit their goals and needs, or they can select another environment that better fits their goals and needs (Sternberg, & Grigorenko, 2007). People adapt to their environment by capitalizing on individual strengths and begin to recognize and correct their own weakness. Each person has to find and refine their own particular pathway to success. One of the most useful strategies a teacher can teach a student is to help each student figure out how to use what they do well and find ways around things they do not do as well. Students need to learn to capitalize and compensate by balancing their analytical, creative, and practical abilities to reach success. Teaching for successful intelligence can guide teachers in training to teach using a series of teaching techniques that reach as many students as possible (Sternberg, 2002; Sternberg, & Grigorenko, 2007).

Sternberg et al, (2007) continues by describing teaching for successful intelligence as a way of looking at the teaching-learning process that broadens the kinds of activities and assessment teachers traditionally do. Good

teachers "teach for successful intelligence" spontaneously. But for what ever the reason, most do not. Teaching for successful intelligence involves at a minimum, using a set of tasks that encourage students to engage in memory, analytical, creative and practical learning (Sternberg, 2004)

Teaching for memory learning is the most conventional way to teach. Teaching for successful intelligence is not about asking teachers to stop the way they are teaching. The theory of successful intelligence recommends that teachers build on memory learning. Teaching for memory becomes the foundation of all other teaching because students can not think critically about what they know if they do not know anything. Teaching for memory includes assisting or assessing students memory of who, what, where, when, why and how. Teaching and assessing for memory includes recall and recognition of facts, matching one set of items with another, verifying statements and repeating what has been learned (Sternberg, 2002; Sternberg & Grigorenko, 2007)).

Teaching for analytical learning recognizes that some students are not particularly adept as memory learners. Many students have the ability to learn but cannot memorize or recall a set of isolated facts. Teaching and assessing for analytical learning and thinking include: analyzing and evaluating an issue; explaining how something works; comparing and contrasting two or more items; and judging the value of the characteristics of something (Sternberg, 2002; Sternberg & Grigorenko, 2007).

Teaching for creative learning acknowledges that teaching should include encouraging students to use and develop their creative abilities. Some students learn best when they are allowed to find their own individual ways to learn material and then are left to explore ideas that go beyond those likely to be in books or in lectures. Examples for teaching and assessing for creative learning and thinking include: creating a game; inventing a toy; exploring new ways of solving problems; imagining what would happen if scenarios; synthesizing knowledge of a major event such as the Vietnam War or current conflicts (Sternberg, 2002). Sternberg (2002) argues, that to a large extent creative thinking represents a decision by teachers to think and do things in a certain way by redefining responses, taking intellectual risks; surmounting obstacles when people criticize one's attempts at being creative; and working to persuade people of the value of creative ideas.

Some students are practical learners meaning that they do not catch on unless they see some kind of practical use for what they are learning. Examples of teaching and assessing for practical learning include: putting into practice what you have learned, using knowledge learned in every day life, forecasting an event, or changing your own behavior. Examples of applying practical knowledge include applying knowledge of history in running for an elected office, using knowledge of paints to achieve a certain color, or using an understanding of good speaking to give a persuasive talk (Sternberg, 2002). Teaching for practical thinking is about teaching students to adopt certain attitudes when approaching intellectual work. These attitudes include combating the tendency to procrastinate, getting organized to get work done, figuring out how one learns best, avoiding using self-pity as an excuse for not working hard, and avoiding blaming others for one's own failings (Sternberg, 2002).

In two separate studies (Sternberg et al., 1999) found that high school students who were taught in a way that, (at least some of the time), enabled them to use their preferred learning skill strengths, outperformed students who were not taught to use their strengths. A second study found that third grade students who were taught for successful intelligence outperformed students who were taught either for either memory or critical thinking. These results were duplicated across grade level, subject matter, and type of assessment (Sternberg, 1998 a, b).

Subsequently, Sternberg et al., (2002) relates that students who were taught for memory, analytical, creative and practical learning outperformed the students taught in the more conventional way on all assignments, whether for vocabulary, or reading comprehension, and whether teachers emphasized memory-based, analytical creative, or practical thinking.

**Teacher Licensure Assessment Standards Reguired in Six States**

The Council of Chief State School Officers recommends several issues to consider in implementing a career-long teacher assessment program. The first step in developing a career-long teacher assessment program is a beginning teacher licensure assessment. Several issues emerge in a discussion of implementing a beginning teacher licensure assessment. They include (1) cost of the assessment to students and the university, (2) defining what beginning candidate performance looks like, (3) evaluation and scoring of the assessment and ensuring validity and reliability especially with performance, (4) developing and storing performance items, (5) test security, (6) the role of university and the teacher education department cultural support for a TPA assessment and (7) providing appropriate technology for taking, scoring, reporting, and storing results of the assessment. Future performance based assessment for teachers will be based on teacher assessment in California and Connecticut. Both states provide a cost effective model that demonstrates effective beginning teacher performance (CCSSO, 2008).

A study of a cross state analysis of the standards in the six states requiring teacher licensure assessment by White, Makkonen and Stewart (2008) found: (1) California (TPA), Texas, Florida, Illinois, North Carolina and Ohio have developed their teaching standards to cover all teachers from beginning to experienced. Texas has developed its teaching standards expressly for beginning teachers, (2) the number of teaching standards in each state varies from 4 (Texas) to 12 (Florida, (3) the states' teaching standards address instruction of English language learners student through recognition or support of diversity, differentiation of instruction, knowledge of related theory or strategies, communication with students and families, assessment of students' language status and development, and selection of related materials or curricula, (4) Instruction of students with disabilities is address through differentiated instruction, inclusion, collaboration with Individualized Education Programs, student rights, styles of learning, identification of students with disabilities, and use of technology for collaboration or communication, and (5) the teaching standards considered accountability and student learning standards through teachers' knowledge and understanding of state learning standards, use of learning standards to plan instruction, delivery of standards-based instruction, and assessment of students' progress toward meeting state learning standards (White, Makkonen, & Stewart, 2008).

An analysis of CCSSO and INTASC teacher credential recommendations and the California TPE reveals that the thirteen standards of the TPE parallels the recommendations of CCSSO and INTASC regarding teaching performance assessment.

**Training High Quality Beginning Teachers and Raising Student Achievement**

California has taken the recommendations of INTACS and CCSO a step further by requiring a TPA prior to an institution of higher learning recommending a candidate for a preliminary teaching credential instead at the end of the first few years of teaching. As a lead TPA assessor for the university recommending the largest number of credential candidates of any other single university for preliminary teaching credentials, my analysis of TPA prompts reveals that successful negotiation of a TPA requires candidates to respond to prompts demonstrating their knowledge of the TPE's using intentional cognitive rationale. A review of the prompts also reveal that the principles of teaching for memory, analytical, creative and practical learning should assist candidates taking the TPA to organize their responses in an intentional way using for rationale from current research. Organizing student knowledge should be a precursor for successfully negotiating a TPA.

If teacher credential candidates become familiar with and practice the strategies of teaching for memory, analytical, creative and practical learning throughout their credential program, then they should be able to recognize students' strongest learning skills, and how to successfully teach to those skills. Additionally beginning teachers will be able to teach students how to compensate for their weaker skills. The result will be that newly credentialed teachers would not be as likely to be teaching with a mismatch between the learning patterns of some students and the particular range of methods they are using to try to teach all students. The outcome of teaching for memory, analytical, creative and practical learning is that beginning teachers learn to teach with a balance of teaching strategies, concentrating not only in memory learning but in analytical, creative, and practical learning. By teaching for analytical, creative and practical learning success, a beginning teacher is addressing some students' strengths, at least some of the time and, at the same time, is allowing students to recognize work on and correcting their learning style weakness (Sternberg, 2002; Sternberg & Grigorenko, 2007).

As teacher credential candidate's progress through their university credential program with TPE's embedded in the curriculum, they will practice making intentional cognitive teaching decisions based on research rationale. By making intentional cognitive teaching decisions teacher credential candidates will identify and encourage students to use preferred learning skills instead of letting those skills go to waste. As teachers in training become more adept at learning and encouraging students to use their learning strengths while correcting learning weakness, student achievement will naturally increase (Sternberg, & Grigorenko, 2007). Teaching for memory, analytical, creative and practical learning, incorporating California's TPE's into a teacher credentialing program and successfully negotiating a TPA are three important steps towards defining what a beginning teacher should know and be able to do. The California TPE's are an agreed upon standard for teacher preparation that moves teaching one step closer to professional status. Other states may want to review the results of first year data from the California TPA to determine if incorporation of TPEs and a TPA into their teacher credential program will support the training of highly qualified beginning teachers.

**Analyzing TPA Pass/Fail Results**

California requires a credential candidate to pass all four tasks of a TPA for a preliminary teaching credential. This requirement applies to all candidates beginning their teaching credential on or after July 1, 2008. As of February 1st, 2010, National University (Torrey Pines, CA), reported the following pass rates per TPA task:

a. 469 students successfully completed Task 1 on their initial submission
b. 125 students successfully completed Task 2 on their initial submission
c. 60 students successfully completed Task 3 on their initial submission
d. 60 students successfully completed Task 4 on their initial submission
e. 13 students who did not pass Task 1-4 on their first try, participated in coached remediation and passed .
f. The University pass rate is 97 percent initial pass rate

**CONCLUSION**

This paper discusses some of the advantages and disadvantages of requiring a Teaching Performance Assessment for a preliminary teaching credential. Since July 2008, California has required the passing of a subject matter teacher licensure assessment and a teaching performance assessment as a requirement for a preliminary five-year credential.

There are several disadvantages to requiring a teaching performance assessment and a subject matter teacher licensure assessment. First, there is added expense to the university teacher credential program in providing web-based technological support for assessment submission, scoring, reporting results, test security, and task resubmission if candidates fail to pass their initial task submission. Second, there will be an expense to the university to train, and recalibrate university assessors. Third, there are added responsibilities and expenses for full time and adjunct faculty for compensation, providing administrative and clerical support, a lead assessor to oversee university procedures for candidate submission, scoring, results reporting and rescoring fifteen percent of the submissions as required by CTC. In addition, the lead assessor determines the real score when two assessor scores do not match. Ultimately, added expenses will be passed on to teacher credential candidates as additional assessment and task reporting fees.

The advantages of implementing a TPA outweigh the disadvantages by adding a perceived validity to California teacher credentialing programs by providing a standardized assessment that can be used measure the progress of teacher credentialing institutions toward training highly qualified beginning teachers for diverse California classrooms. Teaching performance assessment results can also be used by State Departments of Education, politicians, parents, faculty, and local communities to discuss reforming a state's teacher credentialing program to meet NCLB requirements.

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# Memory functioning in post-secondary students with learning disabilities

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**ABSTRACT**

Working memory is a core psychological process. Deficits in working memory have been shown to be related to performance in academic tasks including literacy and mathematics. A limited-capacity working memory system has been shown to underlie some academic difficulties presented by children with diagnosed learning disabilities. Although similar findings have been found for adults with learning disabilities, less research has been conducted with this population. The current study examined 107 adults who were pursuing post-secondary schooling. The subjects were referred by career counselors who suspected them to have undiagnosed learning disabilities. Subjects underwent a cross-battery including assessment of intellectual, achievement, and verbal learning and memory. All subjects met the criterion for a learning disability according to the DSM-IV. After controlling for full-scale IQ, analyses revealed significant partial correlations ($p<0.05$) between working memory, verbal learning and memory, and reading comprehension. Results from regression analysis indicated that working memory was a significant predictor of reading comprehension. Findings provide corroborating evidence of working and auditory memory deficits in adults with learning disabilities.

Key words: learning disabilities, working memory, verbal memory, adult education

## INTRODUCTION

Recent history indicates that there are an increasing number of individuals with learning disabilities (LD) attending institutions of higher education. Surveys among college students indicate between 2% to 4% report having a learning disability including those attending professional programs (Sack et. al, 2008). The American Council on Education reported the number of students with learning disabilities entering college increased significantly from 1978 to 1991 (American Council on Education, 1995) and recent reports continue to suggest that this trend continues (Gregg, 2007). The growing number of students with LD attending higher education is likely related to the important socio-political changes within the last decades that have helped provide supports for students with LD in addition to breaking down the perceived barriers for these individuals.

The demands of higher education are significant for all students and various studies have described the specific academic barriers that face students with LD. For instance, organization and managing time demands are a vital aspect of college life and students with LD show difficulties in their ability to adjust to these demands (Braxton, Milem & Sullivan, 2000; Gans, Kenny & Ghani, 2003). In addition, they appear to take longer to adjust to the challenges of higher education (Greenbaum, Graham, & Scales, 1996). Procrastination is a common issue for students within higher education and select studies suggest that students with LD are more prone to procrastinate and ruminate about initiating work activity (Klassen et al, 2008). There is also a higher incidence of mental health concerns and diagnoses among this population (Wilson et. al., 2009; Mrazik et. al. 2009). In contrast, students with LD reported more social acceptance and support (Cosden & McNamara, 1997) than their peers and some students show a stronger awareness and openness to seeking and using available resources (Raskind et al, 1999).
Various meta-analytic and confirmatory factor analytic studies have identified the “double deficit hypothesis” in lexical retrieval and phonetic awareness in individuals with LD (Birch & Chase, 2004). This has implications for interventions and strategies directed at improving reading and reading fluency. A lesser understood dimension of LD relates to verbal learning and memory difficulties. Several studies have identified verbal working memory deficits as contributing independently to reading comprehension weakness in students with LD (Katz, Golstein & Beers, 2001; Ransby & Swanson, 2003). Several studies have considered working memory deficits in children (Swanson & Seigal, 2001) or adolescents (Ranby & Swanson, 2003; Sterr, 2004) but there have been few studies directed

towards adults, especially those attending post-secondary schooling. The importance of an efficient auditory memory system for students is vital given that the majority of instruction in college is presented orally.

For all students of higher education, verbal working memory and verbal learning play a key role in global cognitive functioning. For instance, Reber & Kotovsky (1997) found that taxing the working memory system was related to difficulties learning to solve problems. Specific to individuals with LD, one study explored differences between students with LD compared to those without LD in terms of reported reasons subjects felt they experienced difficulties in post-secondary schooling (Heiman, 2003). Results suggested that a significantly higher number of LD students reported problems with memory than students without LD. This translated into more global academic difficulties.

The importance of an efficient memory system cannot be understated, especially for students attending post-secondary institutions. It was the purpose of this study to investigate cognitive variables of auditory learning and memory. Specifically, our study sought to examine adults attending post-secondary schooling who were diagnosed with LD. All subjects underwent a comprehensive cross-section battery of psychological tests including measures of working memory, verbal learning and memory, and reading comprehension. Results of testing sought to identify specific cognitive processes that may account for difficulties students with LD have with learning. It was hypothesized that students with LD would demonstrate poorer performance on measures of working memory, verbal learning and memory, as well as reading comprehension.

## SUBJECTS AND PROCEDURES

One hundred and seventeen adults (mean age = 27.73 SD = 8.75) were evaluated at a university outpatient education clinic. All subjects were referred by a career counselor who either suspected subjects to have an undiagnosed LD or who had a previous diagnosis of a LD. All subjects were students enrolled in a post-secondary education program (mean education = 12.11, SD = 1.9) in the province of Alberta, Canada. To be eligible for learning and test accommodations at their post-secondary institution, participants were required to undergo a comprehensive psycho-educational assessment including a detailed clinical interview. All subjects provided written consent to participate in the assessment. Subjects included students who were diagnosed with a learning disorder (in reading or written expression) according to the DSM-IV criterion. Seven subjects were eliminated from the study as a result of a concurrent diagnosis and treatment of a psychiatric illness. Three subjects were also eliminated because of a reported history of a severe traumatic brain injury.

## INSTRUMENTS

The assessment battery included the Wechsler Adult Intelligence Scale, 3rd Edition (Wechsler, 1997), Woodcock Johnson Test of Achievement, 3rd Edition (Woodcock, McGrew & Mather, 1989), and California Verbal Learning Test, 2nd Edition (Delis et. al, 2000). Results from other measures included in the cross-battery assessment (complex visual attention, and executive decision making) were not included in this study. Scores from the WAIS-3 and WJ-3 were reported as standard scores (mean = 100, SD = 15). Results from the CVLT-2 were presented as z-scores for individual subtest/index scores (mean = 0, SD = 1) and as a t-score for total learning score (mean = 50, SD = 10).

## RESULTS

Descriptive statistics are provided in Table 1. For students with LD, global performance on measures of intellectual functioning fell within the educational description of the average range (mean = 93.80, SD = 14.01), with subjects showing a slight but non significant advantage of performance intelligence compared with verbal intelligence. Analysis of the four index scores comprising the WAIS-3 indicate subjects had their lowest performance on the Working Memory Index (WMI) with mean scores falling at approximately the 25th percentile (approximately two-thirds of a standard deviation below the norm). Subjects also demonstrated lower performances on the Processing Speed Index (PSI) compared with other index scores. This pattern of results was quite similar to subjects with reading LD that comprised the standardization sample of the WAIS-3 (Psychological Corporation, 1997). As expected, mean scores on measures of passage comprehension were 12 standard score points below the mean.

Correlations among the index scores of the WAIS-3 demonstrated significant correlations with measures of reading comprehension and composite memory scores (Table 2). Of importance to this study, correlations between measures of reading comprehension, the WMI, and CVLT-2 composite learning score were significant at the 0.01

level. A partial correlation controlling for intelligence continued to identify a significant relationship between working memory and global memory ($p < 0.05$). Regression analysis showed WMI to be the only significant predictor of reading comprehension among demographic and cognitive index scores.

Finally, to further evaluate the impact of verbal memory on reading comprehension, subjects were divided into 3 groups based upon reading ability. The ANOVA was significant ($F(2, 85) = 5.09$, $p < 0.01$). Post hoc comparisons showed subjects with the lowest performances on measures of reading had significantly lower composite memory scores in comparison with subjects with higher reading ability.

**DISCUSSION**

Statistical trends from recent history suggest that more students with LD's are attending institutions of higher education (Gregg, 2007). These individuals face the same demands of academic programming as their peers, yet they face unique challenges given the nature of their disabilities. Most post-secondary institutions provide supports and accommodations for individuals with LD but there is still much to learn about the efficacy of resources and methods used to support this population.

This study sought to evaluate verbal memory functioning in adults with LD who are attending post-secondary education. Results yielded lower performances on standardized measures of working memory, visual-motor processing speed, auditory learning and memory, and reading comprehension. While past research has consistently shown that working memory impairments exist in individuals with LD, the current study extended findings to global measures of memory and reading comprehension (Swanson & Siegal, 2001). Results suggest that difficulties in working memory and processing speed persist into adulthood for the majority of individuals with LD. While individuals may learn strategies to manage and compensate for weaknesses in learning, it is apparent that patterns of cognitive difficulty persist beyond childhood and adolescence. This likely accounted for the problems college students with LD identified when questioned about the challenges they faced in their academic studies (Heiman, 2003).

The subjects in this study had varying levels of cognitive ability as identified by the large standard deviation of full-scale intellectual functioning (although the overall mean fell within the average range). This result is consistent with the existing literature for individuals with LD, where significant fluctuations in full-scale intelligence are more common (Wechsler, 1997). These fluctuations are likely attributed to impairments in the major cognitive factors associated with global intelligence including working memory and processing speed. However, results suggested that after controlling for the variable of global intelligence, working memory continued to have a strong correlation with reading comprehension. Thus, working memory capacity underscores an important component of reading ability as has been suggested in studies with children. Fluent reading requires rapid access of stored verbal knowledge. Reduction in working memory capacity appears to slow down this process, which has implications for students in higher education where high demands around reading are required. As anticipated, results were magnified for subjects with poorer reading ability, with weaker readers showing significantly poorer verbal working memory and memory performance. The implication is that these individuals appear to face greater challenges in a classroom context where managing the high demands of reading, in conjunction with learning, are essential.

Working memory is an important higher order cognitive ability included in comprehensive assessments of intellectual functioning. Working memory plays an important role in facilitating the comprehension and mental representation of the immediate environment. It also allows for the retention of information about the immediate past, supports the acquisition of new knowledge, allows one to link ideas together, and to formulate relate, and act on current goals (Geake & Dodson, 2005). Working memory has an important relationship to creative intelligence and studies among gifted individuals correlate working memory with fluid analogical reasoning (Geake & Hansen, 2005). It is not surprising that surveys of adults with LD identify problems with traditional methods of studying which typically entail rote and repetitive learning. The study by Heiman and Precel (2003) strongly suggested adults with LD find oral and written explanations to be helpful for learning. These strategies may help to address the deficits of working memory by activating other neural networks in the brain and facilitating learning by association. Simply emphasizing rote repetition does not appear to be an effective strategy given that working memory performance does not appear to improve over the course of the developmental lifespan. However, optimizing an individual's learning style by building upon cognitive strengths appears to be helpful in supporting adult students with LD.

## LIMITATIONS

The weaknesses of this study relate to the generalizability of test findings. Subjects were viewed as a homogeneous group, yet demographic, psychosocial, and personality variables vary considerably in the adult population. In essence, the subjects in this study were likely to face different problems throughout their developmental history and have a wide range of individual resilience and familial support. Second, while results suggest weaknesses in reading comprehension, it is not known how this translates into academic problems. While all subjects were referred because of reported difficulties keeping up with programs of study, the ultimate impact on a subject's school performance would vary. Third, study definitions of LD followed the DSM-IV diagnostic criterion, but this standard is not widely accepted as the best description of a learning disability. Thus results may not generalize to populations where different definitions of learning disabilities are held.

## CONCLUSION

In conclusion, this study investigated a unique and specific outcome of learning disabilities in the adult population. It is apparent that those with LD face not only the challenges related to difficulties with academic functioning (especially reading), but underlying cognitive deficits that may have a more global impact on learning. The current literature indicates that more adults with LD are attending higher education and that they are receiving support for their disabilities. Nonetheless, the best approach to serving and supporting this population remains an area of interest which requires greater understanding and can only be made more clearly through further research with adults with LD.

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Table 1. Descriptive Statistics

| | Mean (standard deviation) | Range |
|---|---|---|
| Age | 27.73 (8.75) | 17-51 years |
| Education | 12.11 (1.9) | 3-16 years |
| FSIQ* | 93.80 (14.01) | 81 – 134 |
| VIQ* | 93.49 (13.81) | 75 - 133 |
| PIQ* | 95.54 (14.46) | 78 - 135 |
| WMI* | 90.12 (13.14) | 71 - 126 |
| PSI* | 92.15 (14.30) | 74 - 134 |
| WJ-3 Pass. Comp.* | 88.72 (8.66) | 70-112 |
| CVLT-2 trial 1** | - 0.60 (1.12) | -2.5 – 2.5 |
| CVLT -2 Total*** | 47.89 (11.30) | 15 - 65 |
| Gender Composition | 53 Males, 54 Females | |

Note. FSIQ = Full Scale Intelligence Quotient; VIQ = Verbal Intelligence Quotient; PIQ = Performance Intelligence Quotient; WMI = Working Memory Index; PSI = Processing Speed Index; WJ-3 = Woocock Johnson Test of Achievement, 3rd Edition, Passage Comprehension; CVLT – 2 = California Verbal Learning Test, 2nd Edition
* denotes standard scores mean = 100, SD = 15;
** z-score means 0.0, SD = 1.0;
***denotes T-score mean = 50, SD = 10.

Table 2. Partial Correlation Coefficients between Intelligence variables, reading comprehension and verbal learning and memory Controlling for Full-Scale Intelligence.

| | WMI | PSI | Pass Comp. | CVLT-2 Trial 1 |
|---|---|---|---|---|
| PSI | 0.32* | | | |
| Pass Comp. | 0.29* | -0.02 | | |
| CVLT-2 Trial 1 | 0.26* | -0.24 | 0.01 | |
| CVLT-2 Total Score | 0.28** | 0.12 | 0.32* | 0.02 |

Note. WMI = Working Memory Index; PSI = Processing Speed Index; Pass Comp = WJ-3 Passage Comprehension; CVLT – 2 = California Verbal Learning Test, 2nd Edition
* $p < .05$.
** $p < 0.01$

R H
E J

# The effect of multitasking on the grade performance of business students

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**ABSTRACT**

The growth and expansion of communication technology have created a multitasking generation of students who believe they are utilizing time more effectively by performing two or more tasks simultaneously. Multitasking refers to the concurrent processing of two or more tasks through a process of context switching. However, research by neuroscientists show that multitasking reduces the brain's ability to effectively retrieve information. The purpose of this study is to empirically examine whether multitasking in class affects the grade performance of business students. We conducted an experiment using 62 undergraduate business students enrolled in the first accounting principles course at a university in the Southeastern part of the United States. The students participated in a class lecture and afterwards were given a quiz covering the lecture content. One-half of the participants were allowed to multitask in the form of texting during a class lecture, while the other half of the participants were not. Our findings indicate that the exam scores of students who text in class are significantly lower than the exam scores of students who do not text in class. Thus, multitasking during class is considered a distraction that is likely to result in lower grade performance. The implications of this study can be very useful to students, instructors, administrators, and other academic stakeholders, about the effect of multitasking in a learning environment on students' grade performance.

Keywords: accounting, brain's memory systems, multitasking; technology; texting

## INTRODUCTION

The growth and expansion of communication technology have created a multitasking generation of students who believe they are utilizing time more effectively by performing two or more tasks simultaneously. Multitasking refers to the concurrent processing of two or more tasks through a process of context switching. In a study by Foerde, Knowlton, and Poldrack (2006), the results show that the brain cannot process two relatively different thoughts at the same time. The brain switches between two different thoughts (context) giving the illusion that one is simultaneously processing both thoughts at the same time. Whenever the brain switches from one task to another, it saves the current state of the former task so it can come back to it later. Therefore, context switching between tasks costs more time because information is being processed at a much slower rate. However, dual task conditions do not reduce accuracy but reduce the amount of declarative learning[1] about a task, which reduces the brain's ability to retrieve information. Langer (2003) notes that the way information initially is processed may determine the way in which it is used. When information is processed mindlessly, it becomes frozen the way in which it was originally received. For example, students who study while listening to music or using the cell phone may find it difficult to retrieve that information during exam time.

Several studies show that students are great multitaskers and use technology on a daily basis for educational, job and personal use (Alsop, 2007; Heather, 2003; Walus, 2008; McAllister, 2009). However, there is a concern that the use of some technology in class hinders learning. Tanner, Stewart, Maples, Totaro and Gaines (2008) assert that undergraduate business students do not realize they may be sacrificing some aspects of their

[1] According to neuroscientists, the brain has two memory systems. Declarative memory is one memory system associated with elaborative encoding and effortful retrieval process that depends on the prefrontal cortex of the brain (hippocampus). The other memory system involves a habitual learning process associated with automaticity, which does not require effortful attention or working memory, and it depends on the striatum part of the brain.

academics and study time due mostly to contemporary "technological distractions" such as YouTube, Facebook, and other similar electronic information technologies. Furthermore, Ophir, Nass and Wagner (2009) find that media multitasking is considered a challenge for human cognition. Gasser and Palfrey (2009) suggest that educators must understand the challenges of multitasking and talk to students about the uses and limitations of multitasking as part of school information and media literacy programs.

The purpose of this study is to provide empirical evidence on whether multitasking in a learning environment affects the grade performance of students. We conducted an experiment using 62 undergraduate business students enrolled in the first accounting principles course at an AACSB International accredited university in the Southeastern part of the United States. The students participated in a class lecture and afterwards were given a quiz covering the lecture content. The students were randomly assigned into a control or treatment group as they entered the lecture hall. One-half of the participants (treatment group) received written instructions to send text messages via cell phone, a form of multitasking, while the other half of the students (control group) did not text. A *t-test* was used to determine whether there exists a significant difference between the quiz scores of texting versus nontexting students. The results indicate that a significant difference exists in the quiz scores between texting versus nontexting students. The scores of texting students are significantly lower than the cores of nontexting students. Overall, evidence is provided that multitasking in a learning environment may result in lower grade performance. The implications of this study are very useful to students, instructors, administrators, and other academic stakeholders about the effect of multitasking in a learning environment on the grade performance of students.

The remainder of the paper is as follows. The next section provides a discussion on multitasking literature, which is followed by the methodology. Next, we discuss and analyze the results of the study. We then conclude with a brief discussion of the limitations of the study and opportunities for future research.

## BACKGROUND

### The Brain's Memory Systems

Many neuroscientists are using functional magnetic resonance imaging (fMRI)[2] to observe the function of the brain as it undergoes different learning processes involving dual task (multitasking) conditions. Foerde, Knowlton and Poldrack (2006) conducted an experimental study using 14 participants to examine the two competing memory systems of the brain under single and dual task conditions. The researchers examined the two competing memory systems of the brain function under a single task versus a dual task. The results of the study provide evidence that although a distraction does not decrease the overall learning level, it could result in the acquisition of knowledge that can be applied less flexibly in new situations. Thus, when dual task conditions are present, there is modulation in the two competing memory systems of the brain. The dual task condition is considered a distraction that reduces the ability to retain knowledge effectively.

In addition to the above study, Adcock, Constable, Gore and Goldman-Rakic (1999) examined the brain wave activity of 16 students under single and dual tasks conditions using functional MRI. They found that the brain's wave activity indicates that dual task conditions are more demanding than a single task condition. They asserted that the various specialized information processing systems in the brain may, by their interplay, accomplish the regulation of complex operations such as multitasking. In addition, Goel, Makale and Grafman's (2004) study also shows that the brain engages two memory systems depending on whether the information is familiar or unfamiliar. Reasoning involving meaningful familiar material engages the left hemisphere temporal lobe system and reasoning involving unfamiliar material engages the bilateral parietal system.

### Media Technology in a Learning Environment

Media technological tools, if used appropriately, are powerful devices that can enhance learning. On the other hand, if they are used inappropriately, they can result in harmful consequences to learning. Many schools are embracing the use of technology in the classroom, while others view technology as a distraction that could hinder learning. Fried (2008) examined the use of laptops in the classroom to see how much time students spend multitasking. Results show that students spend a considerable amount of time multitasking and that the laptop is a great distraction to users and fellow students.

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[2] Functional Magnetic Resonance Imaging (fMRI) is a specialized type of MRI that measures the hemodynamic response (blood flow) related to neural activity in the brain or spinal cord of humans or other animals.

Tanner, Stewart, Maples, Totaro and Gaines (2008) investigated students' perceptions about how they spend their time. The results show that students are not really sure how much time is spent on certain activities. A significant difference was found on the actual time versus pre-conceived time that students spend studying, watching television, surfing the Internet, attending class and studying. In addition, the study shows that students are multitasking in a learning situation. Multitasking by students mostly involve the use of cell phones for texting and accessing social networking sites (FaceBook, YouTube, etc).

In an interview between Ron Alsop, a Track Columnist with the *Wall Street Journal*, and Daphne Atkinson, Vice President for Industry Relations at the Graduate Management Admission Council, multitasking in class was a topic of discussion. Ms. Atkinson suggested that millennials' multitasking is driving some instructors wild in the classrooms. According to the Committee on Developments in the Science of Learning and the Committee on Learning Research and Educational Practice (2000), the challenge of education is to design technologies for learning that draw both from knowledge about human cognition and from practical applications of how technology can facilitate complex tasks in the workforce. Gendreau (2007) offered ways to manage technology in the workplace and home. Our study focuses on multitasking, in the form of texting in class and its effect on learning. Based on the above research we test the following hypotheses:

H1: There is no significant difference between the mean quiz scores of texting versus nontexting students.

H2a: There is no significant difference between the mean quiz scores of female versus male students without regard to texting.

H2b: There is no significant difference between mean quiz scores of texting versus nontexting females.

H2c: There is no significant difference between the mean quiz scores of texting versus nontexting males.

H3: There is no significant difference between the mean quiz scores of texting versus nontexting students based on GPA.

## METHODOLOGY

### Participants

Sixty-two undergraduate business students from a public AACSB International accredited business school located in the Southeastern part of the United States participated in the study. All the students were enrolled in the first accounting principles course, which is a required course for all business majors. Table 1 provides an overview of the demographics characteristics of the participants. Twenty-six (41.94%) of the participants are male and 36 (58.06%) are female. Thirty-three (53.23%) of the participants were sophomores, which represents the largest class standing. However, this is expected since the majority of business students do not take the first accounting course until their sophomore year. Pre-business majors represent 50 percent of the students in the study since students are not allowed to choose a major until they have successfully passed all required business courses. GPA was divided into two groups. Thirty-six (58.06%) students have a GPA ranging from 4.0 to 3.0, and 26 (41.94%) students have a GPA below 3.0. University Institutional Review Board permission was obtained to conduct experiments using students.

### Experimental Design

The study employed an independent t-test to examine the mean difference in test scores between texting and nontexing students at the .05 alpha level. The research of interest is to determine whether texting in class, a form of multitasking, affects the grade performance of students. To eliminate repeat students from tainting the results, the lecture included a chapter that would not be covered until the second accounting principles course. After the lecture, they were given a quiz consisting of 20 multiple choice questions from a computerized test bank that accompanies the textbook. The quiz scores may be lower than normal since the students were not told that they would be given a quiz after the lecture.

In order to achieve randomization, the instruction sheets were sorted in an order so that every other instruction sheet contained the treatment (texting). We randomly distributed the instruction sheets to each subject. Half of the students (31) received an instruction sheet requiring them to send the professor three different text messages (treatment) during the lecture. They could send the three text messages at any time during the lecture;

however, all three text messages had to be sent before the end of the lecture. Texting the professor would provide evidence that the students in the treatment group did multitasking during the lecture. The other half of the students (31) was instructed to turn their cell phones off during the lecture. In addition, all students were instructed to not talk to anyone during the lecture in order to maintain anonymity among them about the treatment.

*Results*

**Panel A of Table 2: Texting versus Nontexting**

Panel A of Table 2 shows the results of texting versus nontexting students. Hypothesis 1 states that there is no significant difference between the mean quiz scores of texting versus nontexting students. The hypothesis is rejected. The results show that the quiz scores of texting students versus nontexting students are statistically different from zero ($t = 4.25$, $p = 0.0002$), which shows texting students scored lower than nontexting students. The results provide evidence that multitasking (texting) in a learning environment may result in lower grade performance.

***Panel B of Table 2: Female versus Male***

Further, to get a more robust finding, we extended our analysis to gender and GPA. Panel B of Table 2 examine whether there is statistical difference in quiz scores of males versus females without considering whether they text or not. Hypothesis 2a states that there is no significant difference between the quiz scores of males versus females. Hypothesis 2a is accepted. The results show that quiz scores of males versus females are not statistically different than zero ($t = -1.36$, $p = 0.1793$), which shows that males do not score higher than females. The results indicate that gender does not impact the learning ability of a person.

**Panel C of Table 2: Texting versus Nontexting Females**

We then performed an additional analysis to see whether texting impacts the grade performance of males and females. Hypothesis 2b states that there is no significant difference between the mean quiz scores of texting versus nontexting females. Hypothesis 2b is rejected. The results show that the quiz scores of texting versus nontexting females are statistically different from zero ($t = 3.99$, $p = 0.0003$), which shows that multitasking (texting) females score lower than nontexting females.

**Panel D of Table 2: Texting versus Nontexting Males**

Hypothesis 2c states that there is no significant difference between the mean quiz scores of texting versus nontexting males. Hypothesis 2c is rejected. The results show that the quiz scores of texting versus nontexting males are statistically different from zero ($t = 4.99$, $p = 0.0001$), which shows that texting males score lower than nontexting males. The results of the former two hypotheses provide evidence that regardless of gender, multitasking (texting) in a learning environment may result in lower grade performance.

**Panel E: Texting versus Nontexting Based on GPA**

Our final data analysis examines whether texting in class affects grade performance across different levels of GPA. Hypothesis 2d states that there is no significant difference in the quiz scores between texting versus nontexting students based on GPA level. Panel E of Table 2 show that hypothesis 2d is rejected. The results show that the quiz scores of texting versus nontexting students with a GPA of 3.0 or higher are statistically different from zero ($t = 3.47$, $p = 0.002$), which indicates that students with a GPA range from 4.0 to 3.0, who text score lower than students who do not text with the same GPA. Also, the results show that the quiz scores of texting versus nontexting students with a GPA lower than 3.0 are statistically different from zero ($t = 5.03$, $p = 0.0001$), which indicates that students with a GPA in the range from 3.0 or lower who text score lower than students who do not text with the same GPA. Overall, the results indicate that regardless of the student's GPA, multitasking (texting) results in lower grade performance.

The overall results of the study provide evidence that multitasking in a learning environment can result in lower grade performance of students regardless of gender or GPA. In addition, our results are similar to results found by neuroscientists who provide evidence that the brain is not able to retrieve information effectively under

dual task conditions (multitasking). Texting during class is a form of multitasking, which is considered a dual task condition. Thus, findings from this study provide valuable information to students, educators, and other stakeholders about the effect of multitasking in a learning situation. Evidence shows that there is a cost associated with multitasking in a learning environment – lower grade performance.

## CONCLUSION

The purpose of this study was to empirically examine whether multitasking in a learning environment has an effect on the grade performance of business students. We conducted an experiment using 62 undergraduate business students enrolled in the first accounting principles course at an AACSB International accredited university located in the Southeastern part of the United States. The students are divided into a control group and a treatment group. The students participated in a class lecture, where one-half of the students (treatment group) sent text messages and the other half (control group) did not text. The results of the study show that the quiz scores of texting students were significantly lower than the exam scores of nontexting students. We also performed additional analyses on the impact of texting using gender and GPA. The results show that regardless of gender or GPA, grade performance is lower when multitasking takes place in a learning environment.

Our results are similar to the results found by neuroscientists on the brain's ability to retain and effectively retrieve information under dual tasks conditions. These findings provide valuable information to students who think that multitasking helps them achieve more in less time. Studies show that students spend a considerable amount of time multitasking while in class and doing homework. However, multitasking in a learning environment results in lower grade performance. The results of this study provide valuable information to students, educators, administrators and other educational stakeholders about the effect of multitasking in a learning environment on students' grade performance.

## LIMITATIONS

The first limitation of our study is that we used students from only one university, which may limit the generalizability of the study. Another limitation is the treatment used in the study. Texting is only one form of multitasking students performed in a learning environment. Different results may be found using other forms of multitasking such as surfing the Internet or listening to music. Both of the above limitations may limit the generalization of the study.

## FUTURE RESEARCH

There are many opportunities for future concerning multitasking in a learning environment. Technology generates many methods of communication students use for learning and social activities. Examining other forms of multitasking, such as using cell phones or computers to access social Web sites while learning, may reveal additional information on grade performance. Furthermore, a more diverse group of participants may provide additional information about multitasking and grade performance. Thus, with the expansion of technology, students will always find additional ways to multitask.

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**Table 1**
**Demographic Characteristics of the Students (n = 62)**

| *Variable* | *Number* | *Percent* |
|---|---|---|
| **Gender:** | | |
| Male | 26 | 41.94% |
| Female | 36 | 58.06% |
| **Class Standing:** | | |
| Freshman | 10 | 16.13% |
| Sophomore | 33 | 53.23% |
| Junior | 16 | 25.81% |
| Senior | 3 | 4.84% |
| **Major:** | | |
| Accounting | 17 | 27.42% |
| Finance | 6 | 9.68% |
| Management | 8 | 12.90% |
| General Business | 31 | 50.00% |
| **GPA:** | | |
| 4.0 – 3.0 | 36 | 58.06% |
| Below 3.0 | 26 | 41.94% |

**Table 2**
**Results: Texting versus Nontexting (n = 62)**

Panel A: Texting versus Nontexting

| | n | Mean | Std. Dev. | t-stat | p-value |
|---|---|---|---|---|---|
| Texting | 31 | 42.81 | 9.91 | 1.75 | .0001*** |
| Nontexting | 31 | 58.67 | 10.42 | | |
| Total | 62 | | | | |

Panel B: Female versus Male (Regardless of Texting)

| | n | Mean | Std. Dev. | t-stat | p-value (two-tailed) |
|---|---|---|---|---|---|
| Female | 36 | 48.61 | 13.76 | -1.36 | .1793 |
| Male | 26 | 53.07 | 11.23 | | |
| Total | 62 | | | | |

Panel C: Female

| | n | Mean | Std. Dev. | t-stat | p-value (two-tailed) |
|---|---|---|---|---|---|
| Texting | 20 | 41.75 | 10.79 | 3.99 | .0003*** |
| Nontexting | 16 | 57.19 | 12.38 | | |
| Total | 36 | | | | |

Panel D: Male

| | n | Mean | Std. Dev. | t-stat | p-value (two-tailed) |
|---|---|---|---|---|---|
| Texting | 11 | 44.58 | 8.38 | 4.99 | .0001*** |
| Nontexting | 15 | 60.36 | 7.71 | | |
| Total | 26 | | | | |

Panel E: GPA

| **GPA > 3.0** | n | Mean | Std. Dev. | t-stat | p-value (two-tailed) |
|---|---|---|---|---|---|
| Texting | 12 | 41.61 | 10.50 | 3.47 | .0020** |
| Nontexting | 14 | 59.23 | 10.96 | | |
| GPA < 3.0 | | | | | |
| Texting | 19 | 41.58 | 9.58 | 5.03 | .0001*** |
| Nontexting | 17 | 58.23 | 10.29 | | |

**$p$ <0.05.
***$p$ <0.01.

# Diversity awareness among a diverse business student population: insights and curriculum implications

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**ABSTRACT**

This paper addresses insights gathered from business students enrolled in a Hispanic Serving University (HSU)and resulting curriculum implications related to the continued heritage of the United States to embrace cultures of others. Although awareness of the realities regarding past, current and future diversity within the United State is important for all citizens, such awareness is especially necessary for business students planning to participate in the United States marketplace.

This paper provides a limited historical perspective regarding the evolution and promotion of diversity within the United States. Secondly, the current degree of diversity in the United States is presented through a descriptive analysis of various demographic data including gender, age, ethnicity, marital status, sexual orientation, educational attainment, disability status, language spoken, religion, and socio-economic status. Thirdly, the results of a diversity awareness survey administered to a convenience-based sample of over 60 business students enrolled in a HSU is presented. Lastly, resulting curriculum implications and recommendations are proposed.

The population of the United States was originally based on its' differences and on the desire to protect the citizen's right to be different. Although, not every citizen in the United States welcomes such diversity and related rights, the majority of the citizens do. The enactment and acceptance of various laws requiring diversity is not only a unique part of the proud heritage of the United States, but also poises the country well for future global interaction. Business students, regardless of their own differences, will benefit from an accurate perspective regarding the current and future state of diversity within the United States.

Keywords: diversity, Hispanic Serving University, business curriculum, diversity awareness

## INTRODUCTION

By 2050, the population of the United States will increase to 420 million people. The number of Hispanic-Americans will nearly double to 102.6 million people making up 24.4% of the total population. Further projections include growth related to both African and Asian Americans increasing their proportions of the population by 14.6% and 8% respectively (United States Census Bureau, 2000). As a result, Non-Hispanic American Whites will no longer comprise the majority of the population of the United States. Ethnicity is one of many cultural variables, which continues to contribute to the rich diversity of the Unites States. Regardless, the ways in which business organizations market and operate should reflect the diverse environment entered into.

"Diversity refers to the variety created in society by the presence of different races, ethnic backgrounds and cultures, as well as differences that emerge from class, age, and ability, with the expectation that each of these concepts, in relation to each other, enriches the meaning and value of the other" (Schneider, 1995). While no federal law defines a diverse workforce, Guion's definition of diversity is helpful: "Diversity is a mosaic of people who bring a variety of ethnic and cultural backgrounds, styles, perspectives, values and beliefs as assets to the groups and organizations with which they interact" (Guion, 1999). Public companies and governmental agencies have been reported as more likely to have a definition of diversity whereas small businesses as least likely to have an official definition of diversity. Greenberg offers a good working definition of workplace diversity: "Workplace

diversity refers to the variety of differences between people in an organization. That sounds simple, but diversity encompasses race, gender, ethnic group, age, personality, cognitive style, tenure, organizational function, education, background and more" (Greenberg, n.d.).

Barr and Strong describe a multicultural organization as "one that is genuinely committed to diverse representation of its membership; is sensitive to maintaining an open, supportive and responsive environment; is working toward and purposefully including elements of diverse cultures in its ongoing operations; and is authentic in its response to issues confronting it" (Barr and Strong, 1988). However, Pope explains, "there is no single or broadly accepted definition of the term *multicultural*" (Pope, 1993).

Penn State notes there are two dimensions of diversity: primary dimensions of diversity are those characteristics that cannot be changed, such as gender, ethnicity, race, age, physical abilities or qualities, etc., while secondary dimensions such as education, marital status, income, and geographic location are mutable or changeable (Penn State, 2001). Within the educational environment, Gurin's expert report offered in *Gratz v. Bollinger* and *Grutter v. Bollinger* presents a three-pronged view of campus diversity: structural diversity (the student body's racial and ethnic composition); classroom diversity (curricular incorporation of knowledge about diverse groups); and informal interactional diversity (the opportunity for student interaction with others from diverse backgrounds). She explains: "The impact of structural diversity depends greatly on classroom and informal interactional diversity. Structural diversity is essential but, by itself, usually not sufficient to produce substantial benefits; in addition to being together on the same campus, students from diverse backgrounds must also learn about each other in the courses that they take and in informal interaction outside of the classroom. For new learning to occur, institutions of higher education have to make appropriate use of structural diversity. They have to make college campuses authentic public places, where students from different backgrounds can take part in conversations and share experiences that help them develop an understanding of the perspectives of other people" (Gurin, 1997).

Students also do not have a clear understanding of the meaning of *multicultural.* It should be noted that, at least from the perspectives of minority students, ethnicity is the primary criteria for defining diversity in the workplace (76.6 percent). Gender is the second more important component (53.4 percent), followed by age (29.8 percent) and nationality (26.6 percent). Socio-economic background, religion, personality, and education are also included to a lesser extent; and language skills, sexual orientation, work style, work function, physical disability, and inclusive work environment are also mentioned (Definitions of Diversity, 2008).

Although students value at least the primary dimensions of diversity, they are unsure as to what constitutes diversity in their education. For example, results from a recent Kennedy School Student Government survey of Harvard students demonstrated a significant gap between the value placed by students on diversity (3.6 on a scale of 4) and the extent to which students felt diversity was incorporated into the classroom through teaching and course materials (2.7 to 2.9 on a scale of 4) (Kennedy School Student Government Survey, 2009). Since 2000, the National Survey of Student Engagement (NSSE) has obtained annual student data from more than 1300 colleges and universities about participation in programs and activities that institutions provide for student learning and personal development. NSSE survey data represents undergraduate "good practices" that are used to identify and improve aspects of the undergraduate experience (Indiana University Center for Postsecondary Research, 2009). Focusing on campus diversity as one of those aspects of good practices, Pike and Kuh utilized 2001 NSSE data to conclude that "the effects on the campus environment of interactions among diverse groups seem to depend on the nature and quality of the interactions, rather than on their quantity" (Pike and Kuh, 2006).

Rankin and Reason (2005) examined student perceptions of race on campus and also found differences between the experiences and perceptions of students of color (African American/Black; Asian American; Chicano/Latino/Hispanic) and white students. They encouraged "quality interactions, those that intentionally maximize cross-racial interactions and encourage ongoing discussion contact... both inside and outside the classroom" (Rankin and Reason, 2005). The Building Engagement and Attainment for Minority Students (BEAMS) initiative helped 102 participating MSIs support enhanced student success through the collection and use of NSSE data for decision making, accountability, and campus change in various areas including diversity and multicultural awareness (Del Rios and Leegwater, 2008).

Laird and Associates also used 2003 NSSE data to investigate whether HSIs (Hispanic Serving Institutions) were serving Hispanic students in similar ways that HBCUs (Historically Black Colleges and Universities) serve African American students. They concluded that "the average Hispanic senior at an HSI looks quite similar to the average Hispanic senior at a PWI (Predominately White Institution) in terms of engagement, satisfaction with college, and gains in overall development in contrast to the results for African American seniors who are more engaged at HBCUs than at PWIs" (Laird, et.al., 2004).

**A LIMITED HISTORICAL PERSPECTIVE**

In the Western Hemisphere, indigenous tribes inhabited the territory known as the United States and Mexico, each with their own sets of customs, religions, languages and cultures. English, Dutch, Irish, Spanish and French settlers began immigrating and settling onto the lands of these Native Americans bringing with them their own northern and western European customs, religions and languages. Add to this onslaught, Scandinavian and German immigrants followed by Poles, Italians and Russians in the later nineteenth and twentieth centuries (Metress, 1997). Piece by piece, different sections of the United States was developed by groups of European people. In the area of the middle and southern Atlantic states of Pennsylvania, Virginia, Maryland, Delaware, Georgia, North and South Carolina was where the Irish immigrants settled. The first stage of Irish immigrants brought artisans, small shopkeepers and small farmers from an Ulster Protestant background. Later, as crops failed in Ireland, more farmers and impoverished families along with indentured servants and slaves immigrated with at least 40% of that group being Catholic (Metress, 1997). In the late 1600's, African-Americans were brought into the United States mainly as slaves from the western coast of Africa and were called such because the term depicted the occupation of most of the people with dark skin. In the 1800's the term slaves changed to *Freedmen* to depict these people were free from the bonds of slavery (Naylor, 1997).

The area known as Louisiana began as a French colony which had sparse population. Clerics and slaves began increasing that population in the 1700's. The Louisiana Purchase in 1803 began the westward expansion of the U. S. with the southern-most portion of the Louisiana Purchase inhabitants being Mediterranean, Caribbean and African in origin. Most of these inhabitants were Catholic, spoke many languages and had a dissimilar view of government, law and race. "Creoles of French and Spanish origin, Germans from New Orleans, English pioneers in what would become the Florida parishes, Acadians to the west, free people of color, slaves, and Native Americans would interact with the new waves of Americans from states such as Tennessee and Kentucky" (The Louisiana Purchase, n.d.). The southern portion of the United States became inhabited by what was a melding of European and Indian races that had settled in Mexico and that brought about its own unique social strata where certain unique social and cultural qualities were attributed to the white group while the dark skinned group was undervalued (Cruz, 1997).

As these groups assimilated into their new country, the melding, albeit much occurred through fighting, of the different cultures brought new awareness and identities. Those settling in the north of the United States were considered Anglo-American while those settling in Mexico were considered Mexican or mestizo. With the westward expansion of people from the North and the northern expansion of people from the south, the meeting of both groups brought fighting over the land that each considered their own. In 1846, with the Treaty of Hidalgo, these Mexican born settlers found themselves with an ambiguous national identity, that of American citizens (Cruz, 1997).

Legislation over the years of immigration has played a part in shaping the citizenry of our country. The *Federalists Papers* in 1787 began the acceptance or tacit agreement of English as a predominant language for barter and trade although bilingualism was protected as the right for which the Pilgrims had come to America (Fennelly, 2007; Fitzgerald, 1993). Then the Chinese Exclusion Act of 1882 began the endorsement of definitions of race and class as criteria to define particular groups as "undesirable aliens," ineligible for entry or citizenship (Fennelly, 2007; Lee, 2002). In 1924, the Johnson-Reed Act was passed ending open immigration from Europe by enacting a quota system (Fennelly, 2007; Ngai, 1994). With passage of the 1965 Immigration and Nationality Act (INA) preference was given to the relatives of U.S. citizens, and secondarily to immigrants living in the U.S. and those with special skills needed by American companies. This act became the core of the immigrant system today where the majority of immigrants are granted entrance because of relationships to U. S. citizens (Fennelly, 2007; Green, 2002). The next piece of legislation was the Immigration Reform and Control Act of 1986 (IRCA) which granted unauthorized immigrants who had been in the U.S. since 1982 permanent resident status (Fennelly, 2007; Green, 2002). The Immigration Act of 1990 raised the immigration ceiling to700,000 per year and granted preference to relatives of U.S. residents or citizens and to immigrants with high-level work skills. Although The North American Free Trade Agreement (NAFTA), enacted in 1994, did not include major provisions addressing immigration (it was characterized as a treaty that would indeed lower immigration) instead, it served as a stimulus to increase unauthorized immigration because of the disparities of wage factors of both U. S. and Mexico economies as well as factors of the marketing, sale and transport of goods to and from Mexico (Fennelly, 2007; Massey, 1998) . In 2006, after failing to obtain the immigration reform President Bush had sought in the form of a guest worker program, he signed into law a bill authorizing the construction of a 700-mile fence on the 2,000-mile southern border to try to slow the influx of illegal immigration (Fennelly, 2007).

With legislation for immigration also came legislation for workplace diversity. Since the 1960s, diversity in the U. S. workplace has expanded when it was based on the assimilation approach, where the melting pot concept was used to describe everyone. Followed by affirmative action, and equal employment opportunity they became an important part in the diversity effort with key legislation being a successful instrument for change including the Title VII of the Civil Rights Act of 1964, Age Discrimination in Employment Act of 1967, and the Americans with Disabilities Act of 1990. The movement today toward workplace diversity is one of inclusion and the business case: accepting and controlling disparities for the good of the organization. The blending of different cultures, ideas and perspectives is now judged an organizational benefit so much so that organizations are gradually concentrating on initiatives for corporate diversity to enhance performance (Lockwood, 2006; Thomas & Ely, 2002).

This limited historical perspective of the evolution of U. S. diversity serves to provide a segue into the current degree of diversity in organizations through a descriptive analysis of demographic data including gender, age, ethnicity, marital status, sexual orientation, educational attainment, disability status, language spoken, religion, and socio-economic status.

## METHODOLOGY

### Instrument.

The survey for measuring diversity awareness was created by the authors utilizing each of the eight traditional diversity related variables measured by the United States Census Bureau including gender, age, ethnicity, marital status, educational attainment, disability status, language spoken, and socio-economic status. In addition, the authors included two additional diversity related variables: sexual orientation and religion. Students were asked to select a percentage of the population related to each of the ten variables. The survey is composed of 28-scaled items scored from "a." (lower percentages of the population) to "e." (higher percentages of the population). For example, regarding gender, students were asked to select a percentage which they felt best estimated the percentage of the total United States population who are male. Percentages provided ranged from "a." for 40% to "e." for 60%. A copy of the instrument used can be found in the appendix.

### Sample.

The survey was administered to undergraduate business administration students during the Spring 2009 semester. The survey was administered on a voluntary basis with consent from students who enrolled in marketing, MARK 3371, offered by the School of Business at the University of Texas at Brownsville. After a brief introduction of this research project, the questionnaire was administered by the instructor and took from 5 to 10 minutes to complete. The survey was administered to the marketing students immediately before coverage of a related unit on diversity. Seeking and utilizing student input, as a basis for change is not new. Hansman, Jackson, Grant and Spencer surveyed graduate students to determine gender, race, equality and diversity prior to revising their curriculum to encourage understanding the reality of racial and gender issues (Hansman, et.al., 1999). Phillips, Settoon, and Phillips used student survey input data to design new business management curricula (Phillips, et.al, 2003).

### Data Analysis.

Table I presents three variables. First, the actual or current percentage of the United States population related to ten demographic variables. Secondly, the average student estimate related to the ten demographic variables. Student estimates do not total to 100%, as each estimate was asked for independently. Thirdly, the percentage of over or under estimation comparing the average student estimate to the actual or current percentages is provided (See Table 1).

**RESULTS AND DISCUSSION**

Although, student responses included significant over estimates related to a number of the ten diversity-related variables, overall, student responses reflected significant proportional awareness of diversity within the United States. For gender, estimates were largely accurate. For age, a small underestimation of the middle-aged population and a small overestimation of the senior population are noted. Regarding ethnicity, large overestimations of both American Indian and Asian American populations were provided, although largely accurate on a proportional basis. A small overestimation of the Hispanic/Latino American population and a small underestimation of the White/Non Hispanic American populations are noted. For marital status, a large overestimation of both divorced/separated and widowed populations was significant. For sexual orientation, a large overestimation of the gay/lesbian/bisexual population is noted. However, a related limitation of this study is the lack of a valid and reliable source for estimating the size of the gay/lesbian/bisexual population. For educational attainment, a small underestimation of those with at least a high school education is noted. A somewhat larger overestimation of the percentage of the population with a Bachelor's Degree or higher is noted. For disability status, a small overestimation of disability was estimated among the general population and a small underestimation of disability estimated among the senior population are noted. For language spoken, a large overestimation of the bilingual population was significant. For religion, a small underestimation of both the religious and nonreligious populations is noted. For socio-economic status, overestimation of each level was noted, however the largest overestimate related to the size of the upper class followed by the estimate of the size of the lower class. In summary, the most significant overestimations related to American Indians, Asian Americans, divorced/separated Americans, widowed Americans, gay/lesbian/bisexual Americans, college educated Americans, bilingual Americans, Lower socio-economic class Americans and upper socio-economic class Americans. Underestimations were less significant.

**CURRICULUM IMPLICATIONS AND RECOMMENDATIONS**

Curriculum implications derive largely from the most significant overestimations noted which related to ethnicity, marital status, sexual orientation, educational attainment, bilingual ability and socio-economic status. A general review provided in courses, such as, Principles of Marketing should provide sufficient opportunity to provide students with correct data regarding the various related topics. Specific analysis of student estimates, indicate a potential under appreciation of the uniqueness of bilingual skills common among Hispanic American college students. Attention and sensitivity to curricular, social, economic and cultural expectations must also be considered prior to curriculum revision. Laden reminded HSI business faculty to be cognizant that HSIs also educate non-Hispanic White students and that the "dynamics of cultural and social diversity will continue to be played out in a variety of dimensions within HSIs" (Laden, 2001). All MSI faculties should keep these recommendations in mind. Dayton and Associates also reinforce the need to expand and diversify Latino students' experiences while creating a supportive environment that recognizes individual differences. As one student in their survey of HSIs recognized... going through the transition of working with people from other races is kind of difficult"(Dayton, et.al. 2004). MSI business faculties that deliberately expose students to other cultures and experiences will help students graduate with greater confidence to enter a diverse work environment.

Muller and Parham agree that "racially homogenous students may be differentiated along the lines of class, gender, physical ability, sexual orientation, age, religion, and other dimensions." They place the burden on the instructor "to draw out these stereotypes and dimensions so that they become the focal point of some of the class discussion. In short, diversity education is applicable not only to visibly multicultural or multiracial groups, but to any collective of persons" (Muller and Parham, 1998). Spencer writes that some MSIs are now reaching out to white students in an attempt to diversify their student body. She reports a MSI faculty observation that white students attending an MIS learn that "people are individuals and that there are as many variations within race as there are within society" (Spencer, 2009).

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**APPENDIX**

Table 1: Diversity Awareness—Actual Estimates, Average Student Estimates and Percentage of Under/Over Estimations

| | Actual* | Average Student Estimate | % Over/Under Estimate |
|---|---|---|---|
| **Variable 1: Gender** | | | |
| Male | 49% | 48% | Underestimated by 1% |
| Female | 51% | 52% | Overestimated by 1% |
| **Variable 2: Age** | | | |
| 0-24 year olds | 35% | 35% | Estimated correctly |
| 25-54 year olds | 42% | 38% | Underestimated by 9% |
| 55 or more years old | 23% | 32% | Overestimated by 39% |
| **Variable 3: Ethnicity** | | | |
| Black/African American | 13% | 13% | Estimated correctly |
| American Indian | 1% | 5% | Overestimated by 400% |
| Asian American | 4% | 8% | Overestimated by 100% |
| Hispanic/Latino American | 15% | 17% | Overestimated by 13% |
| White/Non Hispanic American | 66% | 57% | Underestimated by 13% |
| **Variable 4: Marital Status (15 year olds and older)** | | | |
| Married | 51% | 45% | Underestimated by 11% |
| Never Married | 30% | 33% | Overestimated by 10% |
| Divorced/Separated | 13% | 52% | Overestimated by 300% |
| Widowed | 6% | 23% | Overestimated by 283% |
| **Variable 5: Sexual Orientation**** | | | |
| Heterosexual | 95% | 76% | Underestimated by 20% |
| Gay/Lesbian/Bisexual | 5% | 28% | Overestimated by 460% |
| **Variable 6: Educational Attainment (25 year old and older)** | | | |

| | | | |
|---|---|---|---|
| High School Graduate or higher | 84% | 64% | Underestimated by 23% |
| Bachelor's Degree or higher | 27% | 39% | Overestimated by 44% |
| Variable 7: Disability Status | | | |
| Disabled (5 years and older) | 16% | 20% | Overestimated by 25% |
| Disabled (65 years and older) | 43% | 34% | Underestimated by 20% |
| Variable 8: Language Spoken | | | |
| English Only | 81% | 73% | Underestimated by 9% |
| Language other than English | 19% | 33% | Overestimated by 33% |
| Variable 9: Religion*** | | | |
| Religious | 84% | 67% | Underestimated by 20% |
| Nonreligious | 16% | 14% | Underestimated by 12% |
| Variable 10: Socio-Economic Status | | | |
| Upper Class (HH income of $500,000 or more) | 1% | 10% | Overestimated by 900% |
| Upper Middle Class (HH income above $100,000) | 15% | 25% | Overestimated by 66% |
| Lower Middle Class (HH average income of $35-75,000) | 32% | 40% | Overestimated by 25% |
| Working Class (HH average income of $16-35,000) | 32% | 42% | Overestimated by 31% |
| Lower Class (HH average income of less than $16,000) | 20% | 37% | Overestimated by 85% |

*U.S. Census Bureau, 2005-2007 American Community Survey 3-Year Estimates, S2601A, 2007.
**Gay and Lesbian Population Estimates, Human Rights Campaign, http://www.hrc.org, 2000.
***Religious Composition in the U.S., U.S. Religious Landscape Survey, Pew Forum on Religious and Public Life, Pew Research Center, 2007.

**Diversity Awareness Survey In Terms of Percentage of Population**

Please estimate the percentage of the total United States population made up of each of the following groups:

**Gender**

| | **(a)** | **(b)** | **(c)** | **(d)** | **(e)** |
|---|---|---|---|---|---|
| Male: | 40% | 45% | 50% | 55% | 60% |
| Female: | 40% | 45% | 50% | 55% | 60% |

**Age**

| | **(a)** | **(b)** | **(c)** | **(d)** | **(e)** |
|---|---|---|---|---|---|
| 0-24 year olds: | 15% | 25% | 35% | 45% | 55% |
| 25-54 year olds: | 15% | 25% | 35% | 45% | 55% |
| 55 or more years old: | 15% | 25% | 35% | 45% | 55% |

**Ethnicity**

| | (a) | (b) | (c) | (d) | (e.) |
|---|---|---|---|---|---|
| Black/African American: | 1% | 5% | 10% | 15% | 20% |
| American Indian: | 1% | 5% | 10% | 15% | 20% |
| Asian American: | 1% | 5% | 10% | 15% | 20% |
| Hispanic/Latino American: | 1% | 5% | 10% | 15% | 20% |

**Marital Status (15 year olds and older)**

| | (a) | (b) | (c) | (d) | (e) |
|---|---|---|---|---|---|
| Married: | 5% | 25% | 50% | 75% | 95% |
| Never Married: | 5% | 25% | 50% | 75% | 95% |
| Divorced/Separated: | 5% | 25% | 50% | 75% | 95% |
| Widowed: | 5% | 25% | 50% | 75% | 95% |

**Sexual Orientation**

| | (a) | (b) | (c) | (d) | (e) |
|---|---|---|---|---|---|
| Heterosexual: | 5% | 25% | 50% | 75% | 95% |
| Gay/Lesbian/Bisexual: | 5% | 25% | 50% | 75% | 95% |

**Educational Attainment (25 year olds and older)**

| | (a) | (b) | (c) | (d) | (e) |
|---|---|---|---|---|---|
| High School Graduate or higher: | 10% | 25% | 50% | 75% | 90% |
| Bachelor's Degree of higher: | 10% | 25% | 50% | 75% | 90% |

**Disability Status**

| | (a) | (b) | (c) | (d) | (e) |
|---|---|---|---|---|---|
| Disabled (5 years and older): | 10% | 20% | 30% | 40% | 50% |
| Disabled (65 years and older): | 10% | 20% | 30% | 40% | 50% |

**Language Spoken**

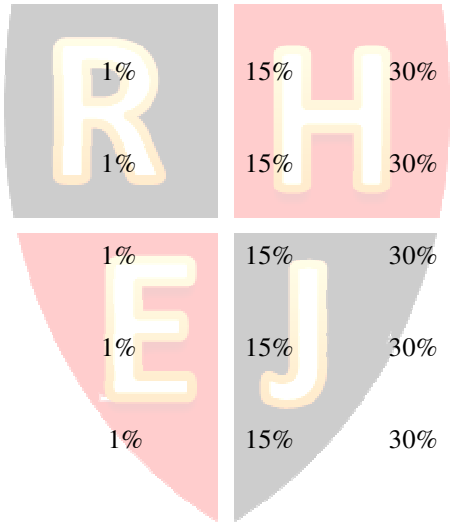
| | (a) | (b) | (c) | (d) | (e) |
|---|---|---|---|---|---|
| English Only: | 55% | 65% | 75% | 85% | 95% |
| Language other than English: | 10% | 20% | 30% | 40% | 50% |

**Religion**

| | (a) | (b) | (c) | (d) | (e) |
|---|---|---|---|---|---|
| Religious: | 10% | 25% | 50% | 75% | 100% |
| Nonreligious: | 0% | 5% | 10% | 15% | 20% |

**Socio-Economic Status**

| | (a) | (b) | (c) | (d) | (e) |
|---|---|---|---|---|---|
| Upper Class (HH incomes of $500,000 or more): | 1% | 15% | 30% | 45% | 60% |
| Upper Middle Class (HH incomes above $100,000): | 1% | 15% | 30% | 45% | 60% |
| Lower Middle Class (HH average incomes of $35-75,000): | 1% | 15% | 30% | 45% | 60% |
| Working Class (HH average Incomes of $16-35,000): | 1% | 15% | 30% | 45% | 60% |
| Lower Class (HH average Incomes of less than $16,000): | 1% | 15% | 30% | 45% | 60% |



# Exploring disparities between teachers' expectations and the realities of the education profession

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**Abstract**

The purpose of this qualitative phenomenological study was to explore common themes emerging from lived experiences of first-year secondary school teachers regarding their expectations of teaching prior to entering the teaching profession, as well as the realities in the classroom environment. In addition, factors influencing their decision to stay or leave the profession of teaching were also explored. A modified van Kaam method by Moustakas (1994) with in-depth, semi-structured interviews was employed to explore the lived experiences of 20 first-year teachers in the Delta, North Okanagan-Shuswap, and Kelowna school districts in British Columbia, Canada. The implications derived from this study suggest that curriculum developers of preparation programs and school district leaders can help improve retention and lessen disconnect by providing first-year teachers with the survival skills necessary to meet the demands of the classroom. The knowledge gained from this study may offer a clear understanding of reasons first-year teachers experience disparities between expectations of teaching and realities of the classroom, and how such disparities affect retention rate.

Keywords: first-year teacher; classroom management; support; disparities; new teachers; disconnect; expectations; realities

## Introduction

Teachers enter the education profession and are attracted to teaching as a career because of what they view as the role of the teacher (Anhorn, 2008). Culross (2007) stated what motivated her to stay in the teaching profession was her love for continuous learning and teaching. Educators experience contentment in their role as a teacher because of the compassion they have for teaching students and the subject matter (Loui, 2006). Despite the fulfillment and satisfaction many teachers experience in educating children in the classroom, Roulston, Legette, and Womack (2005) posited 33% of teachers resign from the education profession within the first three years of teaching. An abundance of past and current literature supports that 25 to 50% of novice teachers leave the education profession within the first five years, showing an ongoing trend of the problem (Bang, Kern, Luft, & Roehrig, 2007; Ingersoll, 2001; Massengill, Mahlios, and Barry, 2005; National Education Association [NEA], 2006; Painter, Haladyna, & Hurwitz, 2007; Schulz, 2005; Yost, 2006).

Once beginning teachers enter the classroom, the expectations of what they perceived the education profession to be and the realities faced in the classroom can be different (Melnick & Meister, 2008). The education profession is a far more complex career than new teachers realize (Cookson, 2005). Teachers who enter teaching as a career should revisit why they enter into the profession in the first place.

According to Murshidi, Konting, Elias, and Fooi (2006), "when beginning teachers enter the teaching force, they often encounter a reality shock as they confront the complexity of the teaching task. The reality of the actual teaching situation sometimes differs so much from what the beginners were expecting" (p. 266). Novice teachers do not necessarily realize how complex the teaching profession can be. In their first year, many beginning teachers describe this period as a time for survival. Many researchers labeled the first-year of teaching as a "sink or swim" scenario (Amoroso, 2005; Cobbold, 2007; Hill, 2004; Howe, 2006; Lundeen, 2004; Street, 2004). Novice teachers are expected to figure out how to survive the classroom challenges and the daily interactions with administrators, colleagues, and parents. When new teachers arrive into the classroom, a harsh reality occurs because they had unrealistic expectations of the teaching profession prior to entering the classroom (Lundeen).

## Theoretical Framework

In the education profession, a high attrition rate of novice teachers leaving the profession poses a problem for school board personnel who are responsible for hiring, supporting, and retaining teachers (Bransford, Darling-Hammond, & LePage, 2005; Guarino, Santibanez, & Daley, 2006; Ingersoll, 2001; Liu, 2007). Several areas need

further exploration to discover reasons for challenges new teachers experience in the first year of teaching. Since high attrition rates in the profession is a "longstanding" problem, understanding novice teachers' expectations of the profession and how these expectations relate to their actual classroom experiences is important (Ingersoll, 2004).

In the first few years of their careers novice teachers face several difficulties (Darling-Hammond, 2003; Darling-Hammond & Bransford, 2005; Herrington, Herrington, Kervin, & Ferry, 2006; Killian & Baker, 2006; Liu, 2007; Roth & Tobin, 2005; Santavirta, Solovieva, & Theorell, 2007; Yost, 2006). As the education profession changes, so do expectations, leadership models and theories, and teacher development (Anhorn, 2008; Melnick & Meister, 2008). The expectations of the education profession change at a rapid rate (Ingersoll, 2001). Teachers who do not receive assistance, knowledge, training, and support during their first year may experience a sense of abandonment and confusion (Ingersoll, 2001a). Novice teachers begin to see their role as not clearly defined.

Early career attrition rates link to a plethora of issues novice teachers experience in their daily teaching practices, which can cause burnout. An abundance of literature was explored for this study, which stated the following as issues associated with high teacher turnover rates, including (a) increased paperwork, (b) lack of resources, (c) feelings of isolation, (d) low salaries, (e) lack of parental support, (f) large classroom sizes, (g) lack of student achievement, (h) lack of administrative support, (i) lack of recognition, (j) student attitudes, (k) increased accountability, (l) job dissatisfaction, (m) burnout, and (n) stress (Anhorn, 2008; Kokkinos, 2007; Liu, 2007; Quinn & Andrews, 2004; Roth & Tobin, 2005; Schlichte, Yssel, & Merbler, 2005; Yost, 2006). A struggle transpires because novice teachers must cater to classroom students with diverse needs, report and assess students to the best of their ability, deliver quality lessons with various teaching strategies, and employ a range of management strategies to solve aberrant behaviors (Ewing & Manuel, 2005). For these reasons, attrition rates are a mounting concern for administrators.

Historically, a link between teacher preparation programs and educational research exists, which affects whether teachers felt prepared to teach in the classroom (Beck, Kosnik, & Rowsell, 2007; Bruneau, Hoz, & Silberstein, 1997; Schulz, 2005). The role of faculty in teacher preparation programs is to train successfully and prepare new teachers to meet effectively the demands of the classroom (Beck et al.; Darling-Hammond, & Bransford, 2005). In a previous study on novice elementary school teachers, discontent in continuing to teach was experienced because "there was a disparity between their teacher education programs and the "real" teaching world" (Barrett Kutcy & Schulz, 2006, p. 78). The authors found teacher preparation programs did not prepare new teachers for such disparities nor were they equipped to teach in their first classrooms.

Curriculum developers of teacher preparation programs emphasize the theoretical component and lack the key components that can improve a teacher's practice and student learning (Beck et. al., 2007; Bransford et al., 2005; Brzycki & Dudt, 2005; Schulz, 2005). From the findings of their study, Melnick and Meister (2008) reported "Doing school" cannot be simulated in the university classroom, and one intensive field experience cannot equip pre-service teachers with the essentials to succeed in their own classroom" (p. 53). Such reasons may contribute to teacher dissatisfaction, stress, and burnout (Kokkinos, 2007; Santavirta et. al., 2007). Preparing novice teachers to be successful in the classroom cannot only be the sole responsibility of teacher preparation programs (Murshidi et al., 2006).

**Methodology and Procedures**

Many beginning teachers are leaving the education profession at a startling rate. According to Brooks-Young (2007), "For an alarming number of new teachers, the school gates have been a revolving door" (p. 44). The problem is dropout rates for teachers within the first few years of the teaching profession are high (Bang et al., 2007). According to Bartholomew (2007), "it takes three to five years for a new teacher to master the art of teaching and the craft of the classroom. This is about the same timeframe when 40 to 50 percent of new teachers exit the profession" (p. 33). Feelings of unpreparedness, burdensome workloads, unrealistic expectations, lack of collegial and administrative support, alienation, and excessive paperwork are some of the reasons contributing to a first-year teacher's decision to remain or leave the education profession (Buckley, Schneider, & Shang, 2005; Guarino et al., 2006; Schlichte et al., 2005).

First-year teachers have an inclination to leave the teaching profession at higher rates than veteran teachers (Hill, Peltier, & Thornton, 2005; Liu, 2007). When new teachers enter the classroom, they experience disparities between their expectations of their role as a teacher and actual realities faced during their first year (Inman & Marlow, 2004).

The purpose of this qualitative phenomenological study was to explore common themes emerging from the lived experiences regarding disparities between secondary school teachers' expectations of the teaching profession and realities they face upon entering the classroom during their first year. Reasons influencing first-year secondary

school teachers' decision to stay or leave the teaching profession were also explored. The data collection in the study included semi-structured face-to-face interviews involving secondary school teachers with one year or less teaching experience in the Kelowna, North Okanagan-Shuswap, and Delta school districts in British Columbia (BC), Canada. Associated interview questions, which relate to the central questions, served as a contextual frame of reference.

**Data Collection and Analysis**

The data collection process took place in six secondary schools in the Delta, Kelowna, and North Okanagan-Shuswap school districts in BC, Canada. Data collection occurred via semi-structured interviews involving 20 secondary school teachers who have taught for one year or less. Only those first-year secondary school teachers with permanent or temporary teaching contracts and teach grade 8 to 12 secondary school courses were included in the study. From all three school districts, 55 first-year teachers were potential research participants for this study. Using a convenience sample, the target sample population was 20 teachers. Out of the 55 potential research participants, the research study included 36% of the population.

For the convenience sample, administrators administered packages containing information for this study to first-year secondary school teachers. Packages were administered until the population of 20 first-year teachers was reached. Initial contact occurred by email to first-year teachers. All potential participants received a package.

Over an eight-week period from May 10, 2009 to July 5, 2009, dates and times for the interviews were scheduled and conducted. Due to the varied schedules of each participant, interviews were conducted at various times and days of the week. All interviews were conducted in a mutually agreed upon time and location, were digitally recorded, and notes were taken.

Informed consent was attained prior to the commencement of the interviews. Prior to the start of each interview, each participant was cordially greeted and the digital recording device was tested to ensure that it was properly functioning. Using an interview script, interviewees were informed of the purpose of the study, source of data collection, participation risks and benefits, the digital recordings of interviews, voluntary participation and withdrawal, confidentiality of the interviewee, and how long the interview will commence.

The interviews followed the same sequential order as written on the research instrument. First, demographical information was obtained to qualify appropriately research participants. Second, open-ended questions related to the central research questions were asked in the same order. Questions did not need to be repeated; in some cases, the probing technique was used to obtain responses. No leading questions were asked.

To capture the essence of the experiences of participants, open-ended interview questions were employed to examine common themes or patterns that emerged. Responses from interview questions provided a better understanding of the disparities novice secondary school teachers experience and teacher attrition and retention rates. The steps involved in conducting interviews guided the interview process.

Since the interview questions were open-ended, they allowed for a variety of answers. When multiple respondents gave the same or similar answers to the questions, patterns began to surface. Such patterns emerged based on the frequency of the same or similar answers. Frequent answers that are similar or the same, which formed the themes that illustrated the essence and perceptions of first-year teachers, were organized into categories.

A review and analysis of the data took place to identify common themes and patterns that emerged from the conversations of interviewees. To examine the data, a Moustakas (1994) modified van Kaam method and a manual process were employed. In the manual process, extrapolating and analyzing the data from the interviews involved coding and categorizing words and phrases into their respective themes and patterns (Moustakas).

Construction of themes and patterns that emerged from the data through transcription of digital recordings occurred. By presenting the qualitative phenomenological data in such a way, a more thorough comprehension of the problem under examination transpired. The results added to the existing body of literature and reflection of the findings could assist educational leaders in providing provisional recommendations (Moustakas, 1994).

Analysis of the data allowed for meaningful themes and patterns. Organization of the data occurred in categories. Connections among the categories uncovered common themes and patterns. Through the deconstruction of recorded interviews, reconstruction of the data pieces into meaningful data categories and patterns occurred to find common patterns (Moustakas, 1994).

To ensure accuracy of the findings, transcribed interview transcripts were sent to participants for member checking (Denzin & Lincoln, 2005). The emailed offer to review and validate the transcribed interviews occurred upon receiving the transcribed interview. The study participants who did not review the transcripts stated they were honest with their views and were confident in the accuracy of their recorded and transcribed stories.

**Findings and Discussion**

Core themes and patterns were developed by thoroughly examining the transcripts to discover the lived experiences and perceptions of participants in this study. Developing themes from the data consisted of answering the research questions and framing a deep explanation of the phenomenon of the lived experiences of first-year secondary school teachers. Composite descriptions provide meaning to the themes. The eight core themes are presented in table 1.

**Theme One: Love for the Profession**

Study participants (100%) expressed a love for working and inspiring students, and making a difference in students' lives as reasons for entering the teaching profession. Participants (95%) indicated the vision that drove them to choose teaching as a career was due to a teacher during their schooling who acted as a role model, connected with students, and presented the learning material that engaged students. Such teachers helped shape participants' approach to addressing students and the mandated curriculum. Acting as a role model for students, illustrating a passion for teaching through the coursework, making curricular lessons relevant and meaningful, building a classroom atmosphere of communication and trust, and fostering a student-teacher relationship are important skills for success within the teaching profession.

The theory of motivation applies to this theme, because when the teacher-student relationship is developed, communication is established, a relationship exists, trust is built, and a sense of accomplishment is experienced to teach successfully in the classroom (Robbins, 2005). Such motivators contribute to higher levels of self-efficacy. Higher levels of teacher self-efficacy may contribute to higher levels of performance efficacy, contentment in the teaching assignment, positive relationships with students, and less stress.

The perception theory is highly applicable to beginning teachers, as those who were inspired by a previous teacher may have high expectations of what it is to be a teacher and through such experiences, may develop an idealized view of how a teacher should act and perform in the classroom (Evans & Tribble, 1986). Supported by existing literature, the need to make a difference and build connections with students supports the idea that a novice teacher's morale affects the learning of students, which contributes to job satisfaction, higher retention rates, and success in the classroom (Anhorn, 2008; Culross, 2007; Ingersoll, 2004; Inman & Marlow, 2004; Massengill et al., 2005; Murshidi et al., 2006).

**Theme Two: Rewarding Career**

Participants (100%) agreed teaching is a rewarding career and 50% indicated an interest in teaching in the subject specialty area of expertise. Based on participant responses, the career is rewarding when the teaching acts as a driving force to help students become productive citizens in society. Consistent with the literature, a teacher's morale affects the learning of his or her students (Johnson, 2006; Kinsey, 2006). When a teacher's morale is high, the career is more rewarding.

Participants experience fulfillment and joy because of the knowledge, experience, and resources gained from the undergraduate degree obtained in their teachable subject area. This can lessen the strenuous workloads in the first year and novice teachers can achieve success in the classroom. Consequently, more time can be spent on the other demanding areas of teaching.

When first-year teachers teach multiple courses not within the realm of their comfort and experience, a disparity occurs because preparation programs only prepare new teachers on how to plan lessons within the specialty area of the undergraduate degree obtained. The practicum component should allow pre-service teachers to teach a variety of courses outside the specialty area because the teaching load will be appropriately aligned with the teaching assignments given to first-year teachers.

Faculty members who design curricula in preparation programs should account for the current issues and experiences novice teachers face in the classroom to gain a better sense of how to help prepare new teachers. The hope is to match the curriculum to the expectations of new teachers such that the reality of teaching is not overwhelming to the point where a disparity exists. A disconnect is one cause of high novice teacher attrition.

Participants (60%) believed collegial support and camaraderie of veteran teachers are areas where first-year teachers feel a sense of belonging. For successful classroom teaching, novice teachers must have a supportive community of colleagues to exhibit feelings of satisfaction (Anhorn, 2008). Consistent with the literature, a strong social support network may contribute to higher levels of job satisfaction and self-efficacy, less feelings of stress,

and higher retention rates.

Collaboration and support from veteran colleagues enables first-year teachers to endure a sense of acceptance as a member of the learning community. Self-esteem encompasses the need to know the importance of being a staff member in the school and classroom. Of all teachers, first-year teachers need the most support because support will build familiarity with how to instruct classroom students.

Building positive relationships with colleagues will help create a coalition that will provide emotional support and influence first-year teacher retention, job satisfaction, and good teaching (Anhorn, 2008; Schlichte et al., 2005). Mentorship programs will help new teachers receive the survival tools and mechanisms that professional development and preparation programs may not provide. The suggestion of mentorship and induction programs are useful techniques is assisting new teachers in the classroom because they will have better preparation and knowledge of the instructional curriculum and feel less isolated in the classroom.

**Theme Three: Disconnect Exists**

Study participants (100%) expressed a disparity exists between expectations of the education of profession and the actual realities in the classroom during the first year. Prior to entering the classroom, 75% percent of participants believed all students would understand the lessons taught in the classroom and parents would naturally support the first-year teacher during student misbehavior situations. Participants (55%) believed students would naturally be motivated to learn. Evans and Tribble (1986) posited the notion of perceived problems by novice teachers might not encumber effectiveness because perceptions may be faulty. Participants (100%) acknowledged faulty perceptions about the profession occurred due to the inadequacies of preparation programs in preparing new teachers for the classroom realities.

Many participants expressed the desire and motivation exhibited in school is not the same as exhibited by the students they now teach. The notion that "when I was in school I respected my teachers and I had the drive to want to do better than just a passing grade" as expressed by one participant and shared by many participants was an expectation. Participants (55%) had no expectations of classroom management because they did not realize classroom management would be an issue. Classroom management is linked to the fundamental role of being a teacher and when not managed effectively, might cause teachers to burnout.

Participants indicated preparation programs are not providing pre-service teachers with the skills to manage a classroom. Providing workshops and seminars on classroom management at the start of the school year will allow first-year teachers to have a clearer understanding of what to expect in the classroom. Such professional development opportunities will lessen the disparities new teachers experience during the first year; and gain the skills needed to manage a class and achieve teaching success.

Study participants (100%) indicated teaching is a lot more work than expected. Fifty-five percent stated a lack of support as another reality, indicating a disconnect exists, specifically in the areas of the practicality of teaching, student learning, apathetic students, workload, support, parental contact, documentation, record keeping, and classroom management. Consistent with the literature, when a disconnect occurs, new teachers feel isolated, which leads to feelings of frustration, dissatisfaction, anxiety, stress, isolation, and low self-efficacy (Inman & Marlow, 2004).

Although the experiences were pleasant, participants reported unfamiliarity with the school and increasing demands were not what they expected in the first year. Educational leaders and faculty members should provide induction workshops/orientations to assist new teachers in creating successful learning and teaching environments. Induction programs conducted by educational leaders will help build on the existing teacher preparation programs, and ultimately, maintain higher retention rates, and help new teachers build familiarity in gaining increasing knowledge about the school system, which could reduce stress and anxiety. Participant recommendations in this study mirrored McCormack, Gore, and Thomas' suggestions (2006), as both parties believed the initial year of teaching is the most important part of a beginning teacher's professional growth; it directly affects career satisfaction and length.

**Theme Four: Student Learning**

Each participant was clear that students do not learn the same and to plan a lesson effectively means to incorporate individual learning styles to meet students' needs. Higher student achievement results in incorporating differentiate instruction and inclusive teaching practices. A generic lesson plan would only meet the needs of some learners in the classroom. The remaining students would lack the motivation and drive to learn because of the learning needs being unfulfilled. Participants noted all students have different learning styles and educational needs.

Teachers must employ various learning strategies to effectively reach each student and maximize learning.

The definition of differentiated learning not only implies but also states emphatically individualized learning is important for student success. Maslow's hierarchy of needs theory postulates that the basic, lower needs of individuals must occur before higher needs (Hayhoe, 2004; Maslow, 1954). If students cannot understand the lesson or complete the task, their sense of self-worth, security and safety, and self-esteem may deter them from becoming self-actualized.

When students become self-actualized, the first-year teacher also feels a sense of self-fulfillment, meeting the higher needs on Maslow's (1954) hierarchy. Feeling self-fulfilled is an expectation for new teachers because student learning is the core principle of teaching in the classroom. Effective lessons can contribute to higher novice teacher retention due to the feeling of accomplishment being achieved in meeting students' needs. In accordance with the self-efficacy theory (Bandura, 1977), maintaining positive student-teacher relationships will enable students to have a higher quest for learning, which elevates a novice teacher's feelings of fulfillment in the first year.

Understanding how to create a lesson plan to meet the diverse learning needs is essential for beginning teachers to reach out to all learners in the classroom. Having resources to adapt and modify lessons relating to the learning targets will help to individualize learning. Educational leaders and faculty members should be at the forefront of this movement by providing release time, allowing first-year teachers to work alongside veteran teachers. This will give novice teachers an opportunity to learn how to create lessons and units that enhances student learning. Consistent with the literature, permitting new teachers to collaborate with veteran colleagues to develop curricular materials and providing the release time for new teachers to observe other classes are important for professional development and growth (Anhorn, 2008).

**Theme Five: Preparation Programs**

Participants (100%) indicated teacher preparation program theoretical courses were irrelevant for classroom teaching in the first year and did not tie theory into practice. Each participant implied classroom management courses in preparation programs are necessary. Resources and strategies on management are necessary to help first-year teachers survive in the classroom. Classroom management and teaching are interconnected and one facet cannot exist with the other. Research suggests the foundation of good teaching is applicable to effective classroom management (Anhorn, 2008; Melnick & Meister, 2008).

Curriculum developers should reconsider the relevance of theoretical-based classes in assisting teachers in their instructional endeavors. According to Kagan (1992), the notion that the theoretical framework in education programs somehow creates the foundation of formal theory that will nurture as teachers establish themselves needs to be re-evaluated. Moving away from the theoretical approach and towards acquiring insights into the job of a classroom teacher is a necessary attribute for implementing theory into practice (Darling-Hammond, 2003).

The methodology skills learned in preparation programs considered successful strategies for participants (75%). Demonstrations, manipulatives, technology, teaching resources, teaching ideas, feedback, role-playing, peer collaboration, and sharing of resources were informative and helpful strategies. Since the methodology courses in preparation programs align with the teachable subject area, the readily available resources will benefit first-year teachers because they will gain survival tools to teach the mandated curriculum.

When the lesson plans are already prepared, first-year teachers will develop the confidence and comfort to be able to stand up and teach in front of students, contributing to higher retention rates and feelings of job contentment. Reflecting on the knowledge and theoretical portions of preparation programs is important for putting theory into practice. As stated by Bruneau et al. (2006), a transmissive teaching approach does not benefit nor allow new teachers to become acquainted with the complexities of the profession.

Preparation ties into classroom management (Anhorn, 2008). When the novice teacher is prepared, the lessons run smoothly and students are more prone to actively participate and listen. When first-year teachers feel confident that students are behaving appropriately, they will find better ways to present the material for students to learn. To illustrate, when presented with a variety of resources, new teachers will gain a myriad of ideas to create lessons according to student needs.

Faculty members employed in preparation programs should reconsider the current program courses. Adequate teacher training for classroom management and teaching will better influence first-year teachers' decision to remain in the profession, a recommendation provided by study participants. Embedding classroom management strategies in practical experiences will provide the real- world application to learning good classroom management, which is a suggestion provided by Freeman and Knopf (2007) after the findings from their study illustrated novice teachers felt unprepared to manage a classroom. Numerous strategies exist and can assist new teachers in developing better classroom management practices.

**Theme Six: Practical Elements**

Study participants (90%) wished curricular content in preparation programs provided pre-service teachers with practical activities relevant to classroom teaching. Ready-to-use strategies, real-world applications, and classroom management are activities participants wished they had learned. Pre-service teachers need role-paying scenarios to help establish an idea and practice what they had learned such that they become familiar with the types of situations they may encounter upon entering the classroom. A collaborative effort between education faculty and teachers can help move towards an instructional model that provides the quality teaching experiences that teachers require (Bruinsma, 2006; Schulz, 2005). While it is not possible for preparation programs to discuss all aspects of the teaching, the theory that relates to practice will help novice teachers develop intuitive skills in dealing with classroom-related issues.

According to one participant, "while practical skills are easy to pick up and seem easy, they take time to learn and I wish I was given the strategies beforehand. It would reduce the number of mistakes a new teacher makes in addition to the problems encountered." Continued professional developmental opportunities providing teaching strategies will help new teachers gain skills not taught in teacher preparation programs. For instance, providing a workshop on how to set up effectively a classroom will be beneficial. New teachers will become comfortable teaching if they have the appropriate skills and resources gained through professional development, which will contribute to novice teacher retention.

**Theme Seven: Burdensome Workloads**

New teachers are expected to perform many of the same tasks as veteran teachers. This is evident in the teaching assignments given to first-year teachers. Consistent with the literature, participants believed high attrition rates of new teachers occurs because typically, new teachers are given the most difficult teaching assignments, receive little support, are expected to coach extracurricular activities, are assigned to disadvantaged schools, and have more classes to prepare for than experienced teachers (Kinsey, 2006). Given such a workload, stress is inevitable (Hayhoe, 2004). A reduction in the existing strenuous workload will be more manageable for new teachers.

According to participants, multiple and new courses not taught previously affect a new teachers' decision to remain in the profession. New teachers have to self-teach to learn the new material and are not equipped with a complete set of lessons to teach for the entire year. This is time-consuming because for each course, new teachers are expected to create tests for each unit, prepare daily lessons, report student achievement, and mark tests, projects, and assignments. Fifty percent participants believed much of their personal time is consumed by teaching because they sacrifice personal time to prepare for the next day's teaching, which affects retention rates.

**Theme Eight: Stress and Burnout**

The daily expectations of teaching in addition to teaching multidisciplinary courses outside of the specialty area can become a hard, unmanageable load for new teachers. Participants believed a direct correlation exists between motivation and job satisfaction. Such a correlation mirrors Betoret's (2006) and Huysman's (2008) research on burnout dimensions in teaching. Both researchers stated high stress, lack of motivation, and high stress lead to burnout.

Stress is one of the leading causes of teacher attrition (Betoret, 2006). Consistent with the literature, the factors contributing to teacher stress and burnout, include (a) the teaching load, (b) lacking management strategies, (c) working with low achieving students, (d) increasing employer demands, (e) handling angry parents, (f) understanding pacing of lessons, (g) utilizing varying teaching methods, (h) working with mainstreamed students, (i) supervision expectations, (j) job insecurity, (k) apathetic students, (l) lack of respect, (m) lack of time management, (n) expectations from administration, (o) lack of support and resources (p) difficulty in being able to multitask, and (q) working in isolation can contribute to teacher stress and burnout. All such concerns transpire in the first year of teaching (Anhorn, 2008). Past studies have mirrored similar frustrations new teachers experience for not receiving the adequate support mechanisms to teach successfully in the classroom (Betoret; Murshidi et al., 2006).

Fuller and Brown's (1975) model relates to teachers' concerns about the situation and tasks and its relation to concerns about students and less on concerns about the self. When novice teachers are confronted with a variety of concerns relating to the situation, tasks, and students simultaneously, they will experience burnout. Stress and burnout contribute to feelings of discontentment to teach and are reasons why 33% of first-year teachers exit the

education profession (Hill et al., 2005; Roulston et al., 2005).

Consistent with the research by Haberman (2005), productivity, performance, task, and attitude link to burnout. Such factors are associated with the fact that teaching is a multi-faceted profession. Participants in this study and past literature indicated in the education profession, maintaining teacher job satisfaction is a concern for educational leaders (Kinsey, 2006). Providing workshops specifically designed to assist, support, and educate novice teachers on how to manage the teaching load is necessary for several reasons.

First, professional development provides support for new teachers that would otherwise not occur because teachers work in isolation. Second, professional development is an avenue to gain skills not learned in preparation programs that could be successful and beneficial for the current and future classroom. Third, professional development acts as a forum for novice teachers to meet other new teachers who share similar experiences. Fourth, through a collaborative workshop, many teachers can use role-playing scenarios to work together in solving the daily dilemmas, areas participants indicated they wished they had learned and would have better prepared them to teach.

**Conclusions and Recommendations Based on Core Themes**

The New Teacher Support (NTS) model recapitulates the core themes elicited from this study and presents value to understand how to develop and set up first-year teachers for success (see Figure 1). The model illustrates how curriculum developers and educational leaders can better support first-year teachers. The purpose of the model is to bridge the gap and minimize the disparities between first-year teachers' expectations and the actual realities experienced in the classroom.

The model consists of three components and the components cannot exist without the other. To illustrate, the recommendations implemented by curriculum developers in teacher education programs need to supply the foundation for success of the support provided by school district administrators and leaders. Ultimately, the survival skills provided by faculty members and school district leaders will serve as valuable resources for new teachers.

The first component includes recommendations by participants on the strategies, courses, and skills faculty members of preparation programs should consider when designing course curriculum. As illustrated in the NTS model, incorporating inquiry and reflection practices into the curricular courses in preparation programs will encourage intellectual development and improve teaching practices in the classroom. This component of the model was created because of the suggestions provided by participants when asked questions specifically relating to preparation programs.

The second component, Administrators/Educational Leaders of School Districts, includes the goals leaders should incorporate to further support first-year teachers upon entering the classroom. Through continued professional development focusing on first-year teachers' needs, the skills learned in preparation programs can be emphasized and new strategies, resources, and skills can be gained.

In the NTS model, continued professional development throughout the first year will help to diminish the disparities experienced by first-year teachers. This will supplement the existing knowledge first-year teachers gained from preparation programs and will continue to help to shape their current teaching pedagogies. Because new teachers need the most attention and support at the beginning of their careers, induction programs can help build on the existing teacher preparation programs. Since a disparity exists, redefining the teaching pedagogies is beneficial as new teachers transition from preparation programs into the classroom. Changes in pedagogical thought through development designed for first-year teachers will help them better meet the daily teaching demands of the classroom.

The third component is the outcome when the first two components are utilized. Consistent with previous literature and theories on self-efficacy, motivation, Maslow's hierarchy of needs, perception, job satisfaction, attrition, problems in classroom teaching, and stress, first-year teachers who are taught the survival skills prior to and upon entering the classroom will likely stay in the profession. For example, if preparation programs tie theory courses into the realities of teaching prior to entering the classroom, first-year teachers will have guidance in what to anticipate prior to entering the classroom.

When new teachers walk into the classroom, administrators can supplement this support by encouraging new teachers to engage in professional development opportunities. Professional development opportunities should be designed specifically to provide a variety of survival skills and approaches to successful teaching. Adequate professional development opportunities will ultimately heighten new teachers' commitment to school and classroom teaching, feelings of preparedness, motivation, self-actualization, and self-efficacy.

As the model illustrates, a partnership between teacher preparation programs and schools can provide a purpose and direction to both faculty members and teachers in teaching in the classroom and providing the survival

mechanisms. Curriculum developers and school leaders should instruct and assist new teachers and speak to those concerns. A collaborative effort between educational faculty and school district leaders will help move towards a model that provides quality-teaching experiences that novice teachers require for effective teaching.

**Significance to Leadership**

Scholars and practitioners will benefit from the results of this study as the information provided described strategies and resources that will affect the retention rates of first-year secondary school teachers, how prepared they will feel in the classroom, and the skills needed to succeed in the classroom. Results in this study provide educational policymakers with information to support the financial need for any professional development activities that correspond to the specific skills novice teachers wish to learn. From the results of this research study, educational leaders can discover strategies and tools to help those new teachers in the classroom, those who want to become teachers, and those who train and hire new teachers. For school board personnel hiring first-year teachers, potential results will be of particular importance as the cost of rehiring is burdensome. According to Cavanagh (2005), the nationwide cost of replacing beginning teachers in the United States (U.S.) who leave the profession or change schools is approximately $5 million annually.

Effective school district leaders understand the importance of supporting new teachers through effective professional development because it increases new teachers' opportunities for success in teaching (Gilbert, 2005). Such information is of importance to educational leaders who are responsible for creating induction programs and orientations that specifically meet the needs of first-year teachers and assists them in feeling prepared to teach in the classroom. The results can be of interest to faculty members in post-secondary institutions, as an analysis of the data provided important information aiding in the development of program curricular planning. The results is of interest for schoolteachers and administrators because the lived experiences of study participants provided a better understanding and insight into why new teachers leave the education profession.

Adequate support mechanisms for appropriate training and management are important for the success of first-year teachers. Educational leaders and administrators who aspire to work with new teachers in becoming familiar with school culture, in helping to solve the daily dilemmas of teaching, and in shaping first-year teachers' teaching philosophy will contribute to first-year teacher success. When district leaders are visible through being at the forefront of providing support, first-year teachers will experience higher levels of self-efficacy.

School in-services conducted by administrators, providing release time for novice teachers to work with veteran teachers, and school district professional development opportunities will provide new teachers with a myriad of choices on how to specifically prepare first-year teachers. They need to be provided with professional development opportunities to help them receive adequate resources in becoming a seasoned teacher. Administrative support will influence both career satisfaction and retention of beginning teachers, as the initial year of teaching is the most important part of a novice teacher's professional growth (Quinn & Andrews, 2005).

**Limitations to this Study**

In this study, the following limitations are applicable:

1. The study was limited to 20 first-year teachers in three school districts in British Columbia, Canada. The sample size was limited and beyond the researcher's control.
2. Only secondary schools in the Delta, Kelowna, and North Okanagan-Shuswap school districts were involved in the study. The results may not accurately represent school districts in other parts of the country.
3. It was assumed that participants would respond without preconceived biases when completing the survey. Therefore, the study is limited to teacher honesty in response to the interview questions.
4. Generalizability is limited due to a homogenous sample and time sensitive and natural settings that are subject to change.
5. Data collection and analysis was limited to a 3-month timeframe. A longer length of time may have improved the depth of thematic analysis.

**Recommendations for Further Research**

Based on the findings from the study the following recommendations are suggested. Since this study was limited to only three school districts in BC, Canada, it is recommended that future research be conducted in

additional school districts across the country with a larger sample size. This would allow future researchers to gather information that is more detailed from a variety of geographical areas and may lead to an in-depth understanding of first-year teachers' expectations of teaching prior to entering the profession, as well as their actual experiences in the classroom.

Due to the relatively small geographic area used in this study, the limitation of the study to secondary school teachers, and the number of participants, a suggestion for future research is to repeat the study in elementary and middle school in other areas across Canada. A repeat qualitative phenomenological study with the same group would also determine if changes have occurred over a certain length of time. Future researchers could also conduct the same qualitative study asking the same questions with a larger sample size in the same school districts, which would provide comparative perceptions and innovative insights.

Studies to determine the effectiveness of mentorship programs on first-year teachers would also add to the insights that may be shared across those who already have mentorship programs in place. As the problems that first-year teachers face on a daily basis continue to be the reality of classroom teaching, studies which examine mentorship and first year classroom teaching should be conducted to identify the effectiveness and challenges and how they contribute to first-year teacher success in the classroom. A recommended area is to conduct comparative studies showing the impact of mentorship programs on first-year teachers and first-year teachers who are not involved in a mentorship program.

Future research in teacher preparation programs and first-year teacher preparedness in schools should be conducted to establish statistically the significance of whether preparation programs are meeting the needs of first-year teachers is another recommended area. Longitudinal studies to determine the lasting effects of new teachers' views of the education profession as they progress further into the career should also be conducted. The results of such studies would provide information on whether first-year teachers become better acquainted with the profession with time and experience. Future research comparing first-year teachers with veteran teachers should be conducted to see whether a difference exists in terms of the expectations of the teaching profession and the realities of the classroom.

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Table 1

*Core Themes and Patterns from Interviews*

| Theme and Pattern | Description |
|---|---|
| Love for the profession | Love working with students and making a difference in students' lives |
| Rewarding career | Inspiring students to succeed in school and life through subject matter and relationships |
| Disconnect exists | Clear disconnect between the expectations and realities of classroom teaching |
| Student learning | Meeting all learners' needs via inclusive teaching practices and differentiated instruction |
| Preparation programs | Theory courses irrelevant, methodology courses relevant, and management courses necessary |
| Practical elements | Emphasis on strategies and skills necessary to survive in the first year classroom |
| Burdensome workloads | Various expectations on first-year teachers and teaching outside regular school hours |
| Stress and burnout | Result of the demands placed on first-year teachers |

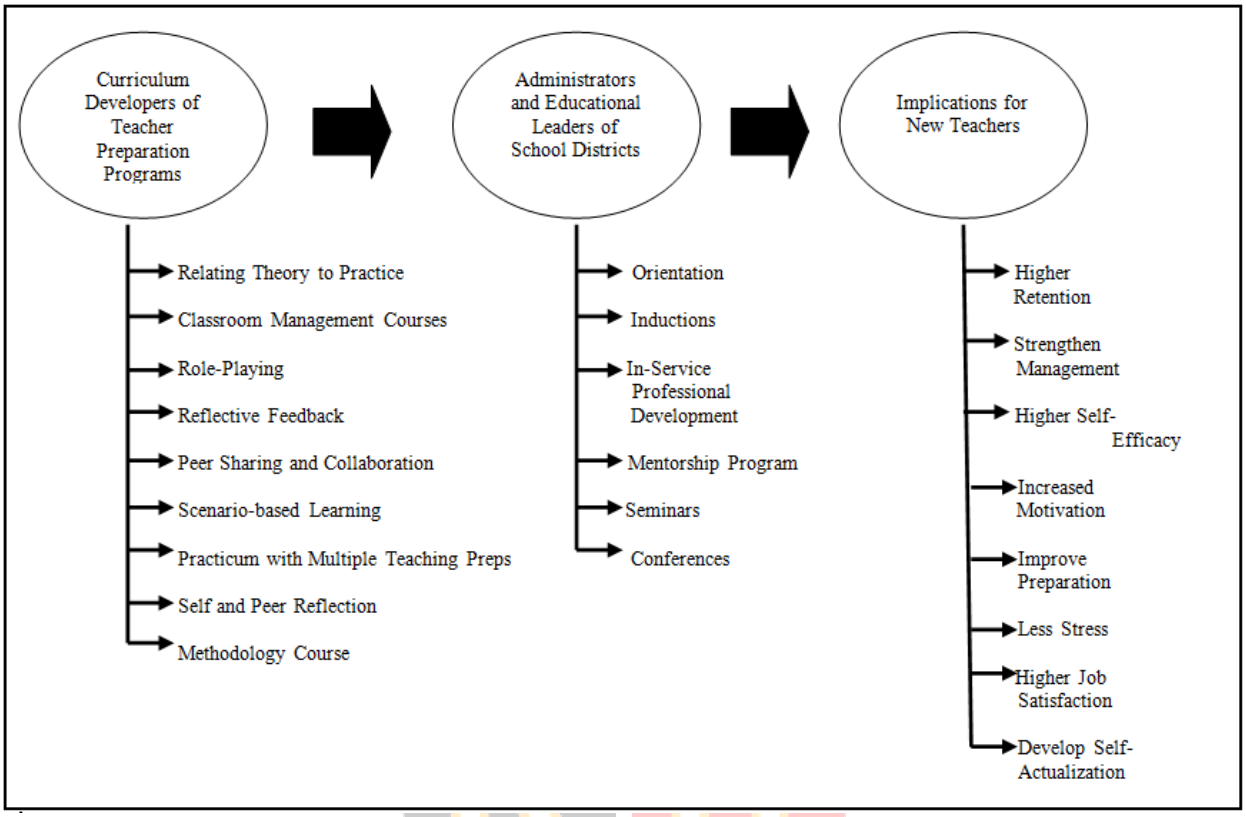


**Figure 1**. NTS model of preparation for first-year teacher development.

# Teaching students the Production Cost Report - an evaluation and an alternative

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## ABSTRACT

A challenging concept to successfully teach in accounting classes is the assignment of costs under the process costing system. Most pertinent textbooks rely on a similar series of steps resulting in a seemingly standardized production cost report. It has been the authors' experience that the majority of their students attempt to memorize the steps leading up to, and the format of, the report provided in the textbooks without understanding the analysis presented on the report. To compound the situation, informal conversations with management accountants reveal that the production cost report format, standardized in the accounting textbooks, is not standardized in accounting practice. Thus, it is especially important that students understand rather than memorize the analysis of the costs (both total and per unit) assigned to ending inventory and the goods transferred to the next process or completed. Additionally, promoting the understanding of the concepts generally results in increased retention by students. In this paper, the authors survey the current textbook presentation of the process costing system and suggest an alternative method of teaching process costing that will encourage an understanding by students, rather than memorization. The emphasis of this approach is on problem-solving, rather than completing steps or "filling in the blanks."

Keywords: process, cost, accounting, teaching, production, report, textbook

## INTRODUCTION

In the course of teaching classes in Management Accounting and Cost Accounting for a number of years, the authors have discovered that one of the most challenging concepts for students to fully appreciate, and consequently understand, is the assignment of costs under a process costing system. The pedagogy of creating the learning environment essential to the understanding of the underlying events is, in the authors' opinion, unnecessarily complicated by the use of the Production Cost Report (hereafter PCR) or its ilk in accounting textbooks. The challenges facing the educator are compounded by the predilection on the part of students to attempt to memorize the format of the report provided in the textbooks without understanding the analysis represented by the report. To confound the situation, conversations with management accountants reveal that the PCR format, standardized in the accounting textbooks, is not standardized in accounting practice. Thus, it is especially important that students understand rather than memorize the analysis of the costs (both total and per unit) assigned to ending inventory and the goods transferred to the next process or completed.

The purpose of this paper is to summarize the current textbook approach to process costing and describe an alternative approach of the analyses of costs associated with a process costing system that will encourage understanding, rather than memorization. The emphasis of this approach is on the goals of the analysis, rather than "filling in the blanks." To provide a basis for comparison, the next two sections present the results of a convenience survey of the coverage of process costing and the PCR in current managerial, cost and principles of accounting textbooks. The fourth section describes an alternative presentation that the authors feel will enhance student understanding and is more relevant given current accounting practice. This alternative approach may be used with both the first-in, first-out (FIFO) and the weighted average cost flow assumptions. The paper concludes with a summary section.

## CURRENT TEXTBOOK PROCESS COSTING PRESENTATIONS

At many institutions, introductory accounting courses include students from a variety of majors and minors. Thus introductory accounting courses must meet the needs of both students who intend to prepare the managerial accounting information and students who expect only to use the output of an accounting information system. Since most accounting majors are required to take a cost accounting course to satisfy their major requirements which

revisits the accounting techniques associated with a process costing system, the introductory management accounting course can cater more to the accounting information users, that is, the non-accounting majors. Thus, coverage of process costing principles in the introductory textbooks (the managerial accounting textbooks and the principles of accounting textbooks) (for example, Easton, Halsey, McAnally and Hartgraves, 2008, Warren, 2009, Weygandt, Kimmel, Kieso, 2009, Warren, Reeve and Duchac, 2009a and b, Horngren and Harrison, 2007, Heisinger, 2010, Braun, Tietz and Harrison, 2010, Balakrishnan, Sivaramakrishnan and Sprinkle, 2009, Edmonds, Tsay and Olds, 2009, Jackson, Sawyers and Jenkins, 2009, Hilton, 2009, Mowen and Hansen, 2008, Atkinson, Kaplan, Matsumura and Young, 2007, Jiambalvo, 2007, Albrecht, Stice and Stice, 2005) may reasonably differ from the coverage in cost accounting textbooks in both focus and depth (for example, Kinney and Raiborn, 2009, Horngren, Datar, Foster, Rajan and Ittner, 2009, Hilton, Maher and Selto, 2008, Blocher, Stout, Cokins and Chen, 2008, Eldenburg and Wolcott, 2005, and VanDerbeck, 2005). Consequently, the three types of accounting textbooks (cost, managerial and principles) are discussed both jointly and separately.

A convenience survey of cost accounting textbooks, management accounting textbooks, and principles of accounting textbooks from major publishers in the United States reveals consistencies in the presentation of the principles behind, and the format of, the PCR at both the introductory level and the more advanced, cost accounting, level. Tables 1, 2 and 3 (Appendix) summarize some of the characteristics of the presentation, including approximately where in the textbook process costing is described, the name of the related report, which cost flow assumptions are demonstrated, and the steps presented to calculate the unit costs and the costs assigned to the ending work-in-process (WIP) versus the units transferred out in a process costing system. An examination of these tables reveals several interesting findings.

One finding of interest is the placement of the presentation of the process costing system in the textbook relative to that of the job order costing system. Not surprisingly, the presentation of job order costing precedes that of process costing, regardless of whether each system is covered in the same chapter, a separate chapter or in an appendix. Job order costing is generally viewed as the easier system with which to introduce students to the flow of costs in a manufacturing setting. It is intuitively appealing and lacks the complication of the concepts and calculations of equivalent units. Traditionally, the presentation of process costing has immediately followed that of job order costing. However, in the textbooks surveyed here, while job order costing continues to be presented relatively early in the textbook to demonstrate product cost flows, the presentation of the process costing system is being postponed or omitted altogether. Of the thirteen managerial accounting textbooks reported in Table 1, the three textbooks with 2010 copyright dates covered activity based costing between job order costing and process costing. In previous versions of these textbooks process costing immediately followed job order costing. One managerial accounting textbook by Noreen, Brewer and Garrison (2008) omitted the coverage of process costing altogether (not in Table 1), whereas an earlier edition of this textbook (Brewer, Garrison, and Noreen, 2005) included seventeen pages of process costing using the weighted average assumption. Of the seven cost accounting textbooks reported in Table 3, three of them covered five or more chapters in between job order costing and process costing. The less prominent placement of process costing, even in the cost accounting textbooks, is consistent with a decline in its perceived relative importance in accounting practice. For example, in a survey of members of the Institute of Management Accountants and the American Institute of Certified Public Accountants, job order costing (and operations costing) ranked among the top 30 out of 86 most important topics for staff positions in management accounting while process costing did not. (Ahadiat, 2008).

Also consistent with a decline in the coverage of process costing is the finding that over the past decade, introductory accounting textbooks have begun limiting their presentation of process costing by assuming no beginning inventory or covering only one of the cost flow assumptions. Of the thirteen managerial accounting textbooks listed in Table 1, six omitted the FIFO cost flow assumption. One of these referred students to a companion website for coverage of the FIFO assumption. One of the managerial accounting textbooks omitted the weighted average assumption, four presented the weighted average assumption first, then the FIFO assumption, and two presented the FIFO assumption first and then the weighted average assumption. Among the accounting principles books reviewed (see Table 2 - Appendix), only two of the seven textbooks omitted the FIFO assumption. The majority of the accounting principles textbooks presented the weighted average assumption first and then the FIFO assumption. One textbook presented the FIFO assumption first, then the weighted average assumption. As might be expected, all of the cost accounting textbooks reviewed presented both cost flow assumptions (see Table 3 - Appendix). Five of the cost accounting textbooks presented the weighted average assumption first, then the FIFO assumption; one presented the FIFO assumption first. One of the textbooks presented both of the cost flow assumptions together, comparing them step by step (Eldenburg & Wolcott, 2005).

The current prevalence of the weighted average assumption in the accounting principles textbooks represents a retreat from the FIFO assumption in several cases. For example, in their 1999 *Fundamental Accounting Principles*

textbook, Larson, Wild and Chiappetta presented only the FIFO assumption. By 2008 Wild, Larson, and Chiappetta presented the weighted average assumption in the body of the chapter and the FIFO assumption in the chapter appendix. Some authors feel that the weighted average method is easier to learn and apply (for example, Hilton, Maher and Selto, 2008). One managerial accounting textbook states that "the differences between the two methods are usually immaterial" (Braun, Tietz and Harrison, 2010). Some authors indicated that the weighted average method is more widely used in practice but gave no supporting references (for example, Hilton, 2009, Atkinson, Kaplan, Matsumura and Young, 2007, and Horngren, Datar, Foster, Rajan, and Ittner, 2009). This dominance of the weighted average assumption in accounting textbooks is particularly noteworthy given that the FIFO assumption is more accurate, generally better reflects the physical flow of the cost inputs and, with the availability of software for manufacturing entities, is no longer onerous to calculate in practice.

In summary, at the principles level, the process costing system is being relegated to a more superficial and delayed presentation when compared with the job order costing system. The weighted average cost flow assumption is more commonly emphasized, with the FIFO assumption either presented subsequently or omitted entirely. At the cost accounting level, there is also a trend toward delayed coverage of the process costing system, uncoupled with the job order costing system. At the advanced (cost) level, both the weighted average and the FIFO cost flow assumptions are presented with the weighted average method generally presented first. These findings provide the setting for the discussion in the next section of the presentation of the production cost report in accounting textbooks. See Tables 1, 2, and 3 in the Appendix.

**THE PRODUCTION COST REPORT (PCR)**

The primary purposes of a process costing system are generally identified as computing the unit costs of the various factors of production (in textbooks, generally these are simplified into direct materials and conversion costs), and the assigning of costs to the units transferred out of a process and the units remaining in the process (for example, Weygandt, Kimmel and Kieso, 2008 and 2009, Warren, Reeve and Duchac, 2009a and b, Warren, 2009, Wild, Larson and Chiappetta, 2008, Easton, Halsey, McAnally and Hartgraves, 2008,, Horngren and Harrison, 2007, and Pollard, Mills and Harrison, 2007, Heisinger, 2010, Braun, Tietz and Harrison, 2010, Oliver and Horngren, 2010, Balakrishnan, Sivaramakrishnan and Sprinkle, 2009, Edmonds, Tsay and Olds, 2009, Jackson, Sawyers and Jenkins, 2009, Hilton, 2009, Mowen and Hansen, 2008, Atkinson, Kaplan, Matsumura and Young, 2007, Jiambalvo, 2007, Albrecht, Stice and Stice, 2005, Hansen, Mowen and Guan, 2009, Kinney and Raiborn, 2009, Horngren, Datar, Foster, Rajan and Ittner, 2009, Hilton, Maher and Selto, 2008, Blocher, Stout, Cokins and Chen, 2008, and Eldenburg and Wolcott, 2005, and VanDerbeck, 2005). The uses of the unit costs and cost assignment in planning, performance evaluation, and control are variously described. In most of the accounting textbooks reviewed here, the summary of the unit costs and cost assignments calculations are presented in the form of a "production cost report" (also called a "cost of production report", a "process costing report", a "product cost report", a "departmental production report", or a "process cost summary"). An example of a PCR is provided in Exhibit A (Appendix).

The expressed importance of this report in practice varies from textbook to textbook. Some textbooks indicated that the report is the "key" or "important" document in a typical process costing system (for example, Hilton, 2009, Weygandt, Kimmel, and Kieso, 2008, Wild, Larson, and Chiappetta, 2008), that it is used by most companies that use a process costing system (Braun, Tietz, and Harrison, 2010), or that it is "frequently" or "typically" used by unspecified users (for example, Edmonds, Tsay, and Olds, 2009, and Heisinger, 2010). More often the PRC is vaguely introduced as the report or document that can be used to summarize the operations or calculations associated with a process costing system.

To generate the information for the PCR, students are led through a series of steps (see Tables 1, 2 and 3). The series of four to six steps cover the following calculations:

a. Calculate the flow of physical units of output (or units to be accounted for and units accounted for).
b. Calculate output in terms of equivalent units for each production element.
c. Calculate total costs for each production element to be accounted for.
d. Calculate the costs per equivalent units.
e. Assign total costs to units completed and to units in ending WIP (or costs accounted for).

The students are given the impression that these steps are standardized and adherence to them is important through the use of phrases such as the "key steps", "we must use the following five-step process costing procedure," and "the five steps to process costing are." The importance of these steps is reinforced in the assignments at the end of the chapter.

Recently some of the textbooks have begun presenting the steps and the PCR with more of a spreadsheet look (for example, Heisinger, 2010, Braun, Tietz and Harrison, 2010, Horngren, 2010, Warren, Reeve and Duchac, 2009a and 2009b, Weygandt, Kimmel and Kieso, 2008, Horngren and Harrison, 2007, Weygandt, Kimmel and Kieso,

2009, Pollard, Mills, and Harrison, 2007, and Horngren, Datar, Foster, Rajan, and Ittner, 2009). For the textbooks reviewed here, this was true for five of the thirteen managerial accounting textbooks, four of the seven principles of accounting textbooks and only one of the seven cost accounting textbooks (see Tables 1, 2 and 3). However, none of the textbooks reviewed emphasized creating a spreadsheet with an input section and an output section that could be used for numerous examples without modification.

In summary, the current textbook presentation of the process costing system encourages students to view the system as an isolated topic, and to memorize steps and the PCR format. For example, it is the authors' experience that when students are asked to calculate equivalent units for materials, they often either produce calculations in steps 1 and 2 for both materials and conversion costs, or attempt to reproduce the top (and sometimes more) of the full PCR. In the next section, an alternative approach is proposed that emphasizes the students' understanding rather than memorization, and encourages the students to take a more integrative view of process costing.

## A PROBLEM-SOLVING APPROACH

The evolution of this particular alternative method began with the effort to teach the steps leading up to the PCR. It quickly became apparent to the authors that this approach was not conducive to understanding the underlying situations, but rather was viewed by the students as a necessary evil for passing that part of the examination to which it applied. This left the teaching experience devoid of any meaningful value either for the students as learners, or for the authors as teachers. This experience led to the development of an alternative method of presenting the process costing system.

Rather than impose a series of steps or a template to be memorized, a situation is presented and the students are encouraged to use a problem-solving approach which has broad applications in management accounting and cost accounting, and encourages an understanding of the underlying issues and events. Using this approach the students are encouraged to determine the problem, the information needed to solve the problem, the process to solve the problem, and their recommended solution(s).

In the classroom, the problem-solving approach might proceed as follows. First the instructor describes a simple one-process manufacturing situation for which a process costing system is appropriate and asks how costs for financial reporting might be calculated. Since students presumably already have knowledge of the job order costing system, they might logically try to apply it to the given situation. This provides an opportunity to compare and contrast the applicability of the two systems. In a cost accounting class, it also provides an opportunity to discuss operations costing. Once the "problem" (determine the cost of goods sold and the cost of inventory according to generally accepted accounting principles) is identified and how the problem will be solved (the concepts of a process costing system) is determined, students are asked to identify the information needed and its source. Once the desired information is identified, the instructor provides the "numbers". Rather than list a series of steps or focus on completing a PCR, students might be divided into groups and asked to calculate the costs attached to ending work-in-process and to the units completed. The various processes used by the students provide a basis for a discussion of the use of equivalent units as an allocation basis.

The authors suggest several advantages to using this approach. First, this approach reflects how management accounting information is driven by its use. The accounting information system must first provide information to meet regulatory needs (for taxing authorities, external financial reporting and possibly government industry oversight) and then provide additional information for management use loosely measured against a cost-benefit threshold. Management accounting information needs are internally driven rather than externally imposed. Thus memorization is less appropriate (and effective) than it would be for financial reporting to external users.

Second, the allocation of dollar amounts is a recurring theme in accounting. The sooner students understand and integrate the major concepts rather than memorizing each application in isolation, the easier and more enjoyable the subject matter will be. For example, the concept of equivalent units is not unlike that of calculating the weighted average number of shares of common stock outstanding in the earnings per share calculation.

Third, in a real world situation, identifying and locating the information needed to solve a problem can be challenging. The learning situations should require students to practice this step. Proper identification of the information needed requires an understanding of the process to be used as well as an awareness of the costs and benefits of obtaining the information.

How can textbooks promote the problem-solving approach? First, process costing techniques should be discussed in terms of satisfying a need or solving a problem. Attention should be paid to the information available to help solve the problem and where it might be found. Next, rather than a series of steps, questions can be posited which are accompanied by discussions including that of possible alternatives. Where possible, the similarities of the current situation or process with those covered previously should be discussed. It is recognized that a summary of the process costing system might involve a listing of steps, but this should be presented at the end of the chapter, rather than as the

basis for learning the process costing system. The exercises and especially the problems at the end of the chapter should take a more realistic approach by emphasizing situational problem-solving and providing both relevant and irrelevant information.

As noted in Tables 1, 2 and 3, some of the textbooks included spreadsheet-like exhibits. Once the process costing system has been presented, practice with spreadsheets can be included in such a way as to enhance the problem-solving approach. Students may be asked to create a spreadsheet that emphasizes the general concepts of an input section and an output section. The output section should employ formulas and cell references, and present the information in a readily understandable format. In keeping with the nature of management accounting information students should be evaluated on their ability to create a spreadsheet that solves a problem and communicates the relevant information, not their ability to reproduce an artificially standardized format.

## CONCLUSIONS

The authors, reflecting on the significance of the PCR, found it odd that in the one area of accounting (cost/managerial) not dominated by a regulatory body that mandates requirements, uniformity in presentation by the textbook authors creates the impression of a "statement" requirement where none exists. The proliferation of the PCR in accounting textbooks despite anecdotal evidence to the contrary in practice evidences a disconnect between the classroom experience and accounting practice that hampers the students' efforts to achieve literacy in the process costing vernacular, purpose and process. The current textbook presentations hamper the students' understanding in several other ways as well. Process costing is taught as a series of steps which encourages students to memorize the steps rather than understand the process. Additionally, in many of the textbooks, the weighted average method is emphasized for ease of calculation over the first-in, first-out method which is conceptually superior. Consequently the authors propose an alternative method of presenting the concepts associated with the process costing system. This alternative method takes a problem-solving approach that encourages the students' understanding of the goals and processes of the cost assignments as they relate to accounting practice, and promotes the students' retention. The result will be a more educational and enjoyable classroom experience for both students and instructors.

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Appendix

**TABLE 1: Process Costing Presentations in Management Accounting**

| Textbook Name & Authors | Presentation of Production Cost Report & Cost Flow Assumptions | Steps in the Analysis |
|---|---|---|
| *Cornerstones of Managerial Accounting* (Mowen & Hansen, 2008) | Chapter 6 of 16 (Job-3);<br>"Production Report:"<br>Weighted Average (FIFO in chapter appendix)<br>No spreadsheet exhibits | 1. Physical flow analysis.<br>2. Calculation of equivalent units.<br>3. Computation of unit cost.<br>4. Valuation of inventories (goods transferred out and EWIP).<br>5. Cost reconciliation. |
| *Essentials of Managerial Accounting* (Heisinger, 2010) | Chapter 4 of 13 (Job-2);<br>"Production Cost Report;"<br>Weighted- Average (FIFO in chapter appendix);<br>Spreadsheet format--no cell formulas | (Enumerated in the Production Cost Report)<br>1. Summarize the physical flow of units and compute the equivalent units for direct materials, direct labor and overhead.<br>2. Summarize the costs to be accounted for (separated into direct materials, direct labor, and overhead).<br>3. Calculate the cost per equivalent unit.<br>4. Use the cost per equivalent unit to assign costs to (1) completed units transferred out, and (2) units in ending WIP Inventory |
| *Fundamental Managerial Accounting Concepts* (Edmonds, Tsay & Olds, 2009) | Chapter 12 of 14 (Job-12);<br>"Cost of Production Report;" Weighted-Average (no FIFO);<br>No spreadsheet exhibits | (No steps enumerated)<br>Sections of the Cost of Production Report::<br>• Determination of equivalent units.<br>• Determination of cost per unit.<br>• Cost allocation. |
| *Management Accounting* (Atkinson, Kaplan, Matsumura & Young, 2007) | Chapter 3 of 12 (Job-3);<br>No report.<br>Weighted-Average (no FIFO)<br>No spreadsheet exhibits | (No steps enumerated)<br>Successive exhibits of calculations:<br>• Production data (flow of physical units.).<br>• Equivalent units of production.<br>• Cost per equivalent units. |
| *Management Accounting* (Balakrishnan, Sivaramakrishnan & Sprinkle, 2009) | Chapter 15 of 16 (Job-14);<br>"Process Costing Report"<br>Weighted- Average (no FIFO);<br>No spreadsheet exhibits | (Enumerated in the Process Costing Report)<br>1. Track the physical flow.<br>2. Compute equivalent units.<br>3. Collect costs to allocate.<br>4. Calculate the rate per equivalent unit.<br>5. Allocate costs. |
| *Managerial Accounting* (Braun, Tietz & Harrison, 2010) | Chapter 5 of 14 (Job-3);<br>"Product Cost Report;"<br>Weighted- Average (no FIFO);<br>Report in spreadsheet format--no cell formulas | (Enumerated in the Product Cost Report)<br>1. Summarize the flow of physical units.<br>2. Compute output in terms of equivalent units.<br>3. Summarize total costs to account for.<br>4. Compute the cost per equivalent unit.<br>5. Assign total costs to units completed and to units in ending WIP inventory |
| *Managerial Accounting* (Jiambalvo, 2007) | Chapter 3 of 14 (Job-2);<br>"Production Cost Report;"<br>Weighted Average (no FIFO);<br>No spreadsheet exhibits | 1. Account for the number of physical units.<br>2. Calculate the cost per equivalent unit for material, labor, and overhead.<br>3. Assign cost to items completed and items in ending WIP.<br>4. Account for the amount of product cost. |

| | | |
|---|---|---|
| *Managerial Accounting* (Oliver & Horngren, 2010) | Chapter 4 of 14 (Job-2);<br>"Cost of Production Report;"<br>Weighted Average then FIFO;<br>Spreadsheet format & explanation | 1. Summarize the flow of physical units.<br>2. Compute output in terms of equivalent units.<br>3. Compute the cost per equivalent unit.<br>4. Assign costs to units completed and to units still in ending Work in process inventory. |
| *Managerial Accounting* (Swain, Albrecht, Stice & Stice, 2005) | Chapter 3 of 10 (Job-3);<br>"Production Cost Report;"<br>FIFO (no Weighted-Average);<br>No spreadsheet exhibits | 1. Compute equivalent units of production.<br>2. Compute the product costs per unit<br>3. Compute the costs transferred out.<br>4. Compute costs of ending work-in-process inventory.<br>5. Prepare the production cost report. |
| *Managerial Accounting* (Warren, Reeve & Duchac, 2009b) | Chapter 3 of 14 (Job-2);<br>"Cost of Production Report";<br>FIFO (Weighted Average in chapter appendix);<br>Spreadsheet exhibits and report without cell formulas. | (Enumerated in the Cost of Production Report)<br>1. Determine the units to be assigned costs.<br>2. Compute equivalent units of production.<br>3. Determine the cost per equivalent unit.<br>4. Allocate costs to units transferred out and partially completed units. |
| *Managerial Accounting: A Focus on Ethical Decision Making* (Jackson, Sawyers & Jenkins, 2009) | Chapter 5 of 17 (Job-5);<br>(No production report);<br>In chapter appendix cover FIFO, then Weighted-Average.<br>No spreadsheet exhibits. | 1. Analyze the physical flow of units and their associated costs.<br>2. Calculate the equivalent units of production.<br>3. Calculate manufacturing costs per equivalent unit<br>4. Allocate costs incurred to the finished units and the ending WIP. |
| *Managerial Accounting: Creating Value in a Dynamic Business Environment* (Hilton, 2009) | Chapter 4 of 17 (Job-3);<br>"Departmental Production Report";<br>Weighted-Average (FIFO in companion website only); Spreadsheet exhibit of input data only. | 1. Analysis of Physical Flow of Units<br>2. Calculation of Equivalent Units<br>3. Computation of Unit Costs<br>4. Analysis of Total Costs |
| *Managerial Accounting, Tools for Business Decision Making* (Weygandt, Kimmel & Kieso, 2008) | Chapter 3 of 14 (Job-2);<br>"Production Cost Report;"<br>Weighted- Average (FIFO in chapter appendix);<br>Report in spreadsheet format--no cell formulas | (Enumerated in the Production Cost Report)<br>1: Compute the physical unit flow.<br>2: Compute equivalent units of production.<br>3: Compute unit production costs.<br>4: Prepare a cost reconciliation schedule. |

**TABLE 2: Process Costing Presentations in Principles of Accounting Textbooks**

| Textbook Name & Authors | Presentation of Production Cost Report & Cost Flow Assumptions | Steps in the Analysis |
|---|---|---|
| *Accounting* (Horngren & Harrison, 2007) | Chapter 20 of 25 (Job-19);<br>"Production Cost Report",<br>Weighted-Average (FIFO in chapter appendix);<br>Spreadsheet-like exhibits | 1. Summarize the flow of physical units.<br>2. Compute output in terms of equivalent units.<br>3. Compute the cost per equivalent unit.<br>4. Assign costs to units completed and to units still in ending work in process inventory. |
| *Accounting* (Warren, Reeve & Duchac, 2009a) | Chapter 20 of 26 (Job-19);<br>"Cost of Production Report;"<br>FIFO (Weighted Average in chapter appendix)<br>Report in spreadsheet format shown without cell formulas. | (Enumerated in the Cost of Production Report)<br>1: Determine the units to be assigned costs.<br>2: Compute equivalent units of production.<br>3: Determine the cost per equivalent unit.<br>4: Allocate costs to units transferred out and partially completed units. |
| *Accounting Principles* (Weygandt, Kimmel & Kieso, 2009) | Chapter 21 of 26 (Job 20);<br>"Production Cost Report;"<br>Weighted- Average (FIFO in chapter appendix);<br>Report in spreadsheet format shown without cell formulas | (Enumerated in the Production Cost Report)<br>1: Prepare a physical unit schedule.<br>2: Compute equivalent units.<br>3: Compute unit costs.<br>4: Prepare a cost reconciliation schedule. |
| *Financial & Managerial Accounting for MBAs* (Easton, Halsey, McAnally & Hartgraves, 2008) | Chapter 18 of 23 (Job-18);<br>"Cost of Production Report;";<br>Weighted Average (no FIFO);<br>No spreadsheet exhibits. | (No steps enumerated)<br>Sections of the Cost of Production Report::<br>• Summary of units in process<br>• Equivalent units.<br>• Accounting for total costs |
| *Fundamental Accounting Principles* (Wild, Larson & Chiappetta, 2008) | Chapter 20 of 25 (Job-19);<br>"Process Cost Summary;"<br>Weighted Average (FIFO in chapter appendix);<br>No spreadsheet exhibits. | 1: Determine physical flow of units<br>2: Compute equivalent units of production<br>3: Compute cost per equivalent unit<br>4: Assign and reconcile costs |
| *Principles of Accounting* (Pollard, Mills & Harrison, 2007) | Chapter 17 of 21 (Job 16);<br>"Production Cost Report;"<br>Weighted-Average (FIFO in chapter appendix);<br>Spreadsheet exhibits without cell formulas. | 1: Summarize the flow of physical units.<br>2: Compute output in terms of equivalent units.<br>3: Compute the cost per equivalent unit.<br>4: Assign costs to units completed and to units in ending WIP inventory. |
| *Survey of Accounting* (Warren, 2009) | Textbook Appendix B (Job-10 of 15);<br>"Cost of Production Report;"<br>Average Cost (no FIFO);<br>No spreadsheet exhibits. | (Enumerated in the Cost of Production Report)<br>1: Determine the units to be assigned costs.<br>2: Calculate equivalent units of production.<br>3: Determine the cost per equivalent unit.<br>4: Allocate costs to transferred and partially completed units. |

**TABLE 3: Process Costing Presentations in Cost Accounting Textbooks**

| Textbook Name & Authors | Presentation of Production Cost Report & Cost Flow Assumptions | Steps in the Analysis |
|---|---|---|
| *Cost Accounting, A Managerial Emphasis* (Horngren, Datar, Foster, Rajan & Ittner, 2009) | Chapter 17 of 23 (Job-4);<br>Two Spreadsheets: "Flow of Production" & Untitled (steps 3,4 & 5);<br>Weighted- Average, then FIFO | (Steps Enumerated in the Spreadsheets)<br>1: Summarize the flow of physical units of output.<br>2: Compute output in terms of equivalent units.<br>3: Summarize total costs to account for.<br>4: Compute equivalent unit costs.<br>5: Assign total costs to units completed and to units in ending WIP. |
| *Cost Accounting, Foundations and Evolutions* (Kinney & Raiborn, 2009) | Chapter 6 of 19 (Job-5);<br>"Cost of Production Report;"<br>Weighted- Average, then FIFO;<br>No spreadsheet exhibits. | 1: Calculate the physical units to account for.<br>2: Calculate the physical units accounted for.<br>3: Calculate the equivalent units of production.<br>4: Calculate the total cost to account for.<br>5: Calculate the cost per equivalent unit of production.<br>6: Assign costs to inventories. |
| *Cost Management:A Strategic Emphasis* (Blocher, Stout, Cokins & Chen, 2008) | Chapter 11 of 20 (Job-4);<br>"Production Cost Report;"<br>Weighted- Average, then FIFO;<br>No spreadsheet exhibits. | (Steps Enumerated in the Production Report)<br>1: Analyze the physical flow of production units.<br>2: Calculate equivalent units for each manufacturing cost element.<br>3: Determine total costs for each manufacturing cost element.<br>4: Compute cost per equivalent unit for each manufacturing cost element.<br>5: Assign total manufacturing costs to units completed and ending WIP. (includes a cost reconciliation). |
| *Cost Management, Accounting &Control* (Hansen, Mowen & Guan, 2009) | Chapter 6 of 21 (Job-5);<br>"Cost of Production Report;'<br>FIFO, then Weighted-Average<br>No spreadsheet exhibits. | 1: Physical flow analysis.<br>2: Calculation of equivalent units.<br>3: Computation of unit cost.<br>4: Valuation of inventories.<br>5: Cost reconciliation. |
| *Cost Management: Measuring, Monitoring and Motivating Performance* (Eldenburg & Wolcott, 2005) | Chapter 6 of 16 (Job-5);<br>"Process Cost Report;"<br>FIFO & Weighted Average together and compared.<br>No spreadsheet exhibits. | 1. Summarize total costs to account for.<br>2. Summarize total physical and equivalent units.<br>3. Compute cost per equivalent unit.<br>4. Account for cost of units completed and cost of ending WIP. |
| *Cost Management, Strategies for Business Decisions* (Hilton, Maher, Selto, 2008) | Chapter 8 of 20 (Job-3);<br>"Production Cost Report;"<br>Weighted- Average (FIFO in chapter appendix)<br>No spreadsheet exhibits | (Steps Enumerated as "Sections" in the Production Cost Report)<br>1: Summarize the flow of physical units.<br>2: Compute the equivalent number of units produced.<br>3: Summarize the total costs to be accounted for.<br>4: Compute costs per equivalent unit.<br>5: Assign costs to goods transferred out and to ending WIP inventory. |
| *Principles of Cost Accounting* (VanDerbeck, 2005) | Chapter 5,6 of 10 (Job-1,2,3);<br>"Cost of Production Summary;"<br>Average Cost in Ch 5; FIFO in Ch 6<br>No spreadsheet exhibits. | 1. Accumulating costs for which the department is accountable.<br>2. Calculating equivalent production for the period.<br>3. Computing the unit cost for the period.<br>4. Summarizing the disposition of the production costs. |

**Exhibit A: Production Cost Report Example—First-in, First-Out (FIFO)**

| **FLOW OF PHYSICAL UNITS**<br>**Units to Account for (or Input):** | **Physical Units** | **Equivalent Units**<br>**Completion Percentage** | **Direct Materials*** | **Conversion Costs*** |
|---|---|---|---|---|
| Beginning Work in Process (WIP) | 1,000 | | | |
| Direct Materials (100% x 1,000) | | 100% | (1,000) | |
| Conversion Costs (60% x 1,000) | | 60% | | (600) |
| Units Started This Period | 10,000 | | | |
| Total Units to Account for (Total Input) | 11,000 | | | |
| **Units Accounted for (or Output):** | | | | |
| Beginning WIP Completed | 1,000 | 100% | 1,000 | 1,000 |
| Units Started & Completed This Period | 8,500 | 100% | 8,500 | 8,500 |
| Ending WIP | 1,500 | | | |
| Direct Materials (100% x 1,500) | | 100% | 1,500 | |
| Conversion Costs (80% x 1,500) | | 80% | | 1,200 |
| Total Units Accounted for (Total Output) | 11,000 | | | |
| **Total Equivalent Units** | | | 10,000 | 10,100 |

| **FLOW OF COSTS**<br>**Costs to be Assigned (or Input):** | **Total Costs** | **Direct Materials** | **Conversion Costs** |
|---|---|---|---|
| Beginning WIP | $25,272 | | |
| Costs Added in Current Period | 312,105 | $150,000 | $162,105 |
| Total Costs to Account for (Total Input) | $337,377 | | |
| Divided by Total Equivalent Units (from above) | | 10,000 | 10,100 |
| Cost per Equivalent Unit | $31.05 | $15.00 | $16.05 |

| **Costs Assigned (or Output):** | **Total Costs** | **Transferred Out** | **Ending WIP** |
|---|---|---|---|
| Beginning WIP Costs | $25,272 | $25,272 | |
| Conversion Costs: To Complete Beginning WIP | | | |
| [(1,000 - 600) x $16.05] | 6,420 | 6,420 | |
| Units Started & Completed This Period [8,500 x $31.05] | 263,925 | $263,925 | |
| Ending WIP Direct Materials | 22,500 | | $22,500 |
| Ending WIP Conversion Costs [1,200 x $16.05] | 19,260 | | 19,260 |
| Total Costs Assigned (Output) | $337,377 | $295,617 | $41,760 |

* Assume materials are added at the beginning of the process and conversion costs are added evenly throughout the process.

# Virtual worlds: An exploratory study of undergraduate behavior

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**ABSTRACT**

Studies suggested that electronic social sites are popular with undergraduates. Virtual worlds, one of the emergent facets of the Internet, are also seeing tremendous worldwide participation. Of interest to educators is the applicability of this new technology as a learning tool. As a result, this study was untaken to empirically examine undergraduate familiarity and interest in virtual worlds as compared to electronic social networking. Student surveys were utilized to measure participation and importance of virtual worlds and social networking. Findings reveal that with regard to students, virtual worlds are in their infancy. While nearly all students visit social sites, only two percent of students participated in virtual worlds and only six percent indicated that virtual worlds were at least somewhat important to him/her. Moreover, gender does not appear to be a factor. Females and males indicate similar levels of participation, social activity, and degree of importance.

Keywords: Virtual worlds, learning, social networking, undergraduates

## INTRODUCTION

The Internet is increasingly being woven more deeply into the fabric of society. A 2007 study of US consumers ages 12+, for example, found that 33% of respondents indicated that the Internet was the most essential medium in their lives (Edison Media Research, 2007). In 2002, only 13% indicated this importance.

One aspect that has dramatically risen is the use of social networking. Individual social networks such as MySpace and Facebook have seen incredible growth. MySpace had approximately 3,000 unique visitors in October 2004 but by December 2008, usage rose to 125 million unique visitors (eweek, 2005; Pratt, 2009). In November 2006, it passed Yahoo Incorporated in U.S. page views (Gentile, 2006). Facebook had approximately 9,000 unique visitors in October 2005 but by December 2008, there were 200 million visitors (Kirkpatrick, 2007; Pratt, 2009).

A recent development within Internet social networking is the implementation of online virtual worlds. Virtual worlds provide users with an alternative to the real world. Currently, there are more than 45 virtual worlds, used primarily for social networking, entertainment, commerce, and education (Wood, et al., 2008). In terms of commerce, 48% of brand marketers developed marketing campaigns in social network channels in 2007, a 26% increase from 2006 (Garcia and Fernandez, 2008). In 2007, 48%, or nearly half, of brand marketers conducted such campaigns. In 2007, the hotel chain Starwood Hotel & Resorts even used the virtual world Second Life to prototype and evaluate a new design for one of its hotel brands (Thilmany, 2008). Relative to education, there were more than 100 schools and educational institutions from more than 20 countries teaching using virtual worlds in 2007. Moreover, e-learning researchers suggest that by 2011, 53% of children and 80% of all active Internet users will be visiting virtual worlds.

Three of the most actively used virtual networks are Second Life, Activeworlds, and There. The most popular and original virtual world is Second Life, developed by Linden Lab and opened in 2003. Participants essentially create all content and the site homepage www.secondlife.com describes the site as a three-dimensional (3D) online digital world imagined, created and owned by its residents. Second Life is an environment that appears similar to the real world with real life rules such as gravity, topography, locomotion, real-time actions, and communications (Good, 2007). It is an entire online community created around the concept of shared social interest and in which users, known as residents, can interact, play, conduct business, communicate, and socialize. Second Life claims to have over 8 million residents, yet it is important to note that an individual can have as many avatars (virtual residents) as he/she would desire. In addition, more than 170 educational institutions worldwide currently maintain a presence on Second Life (Wood et al., 2008). It is important to note that although Second Life is similar

to popular video games that take place in a virtual world (e.g. Sims), it is not a game. There are no defined objectives, no scoring, no rankings, and no formal competition. It is similar to the reality in that residents roam the streets, hang out with friends at their homes and in cafés, operate businesses, participate in individual and group activities, and create and trade items and services. Residents can shop in virtual stores and purchase land, real estate, clothing, cars, and so on with real dollars. The currency in Second Life is the Linden Dollar, which trades against the US dollar, and is linked directly to your actual bank account. The current exchange is approximately $1 USD to $ 267 Linden Dollars. Prices are generally less than those in the real world. For example, clothes might cost the equivalent of a few U.S. dollars and a private island could be purchased at a bargain price of $1,600 USD. Each month, an average of $35 million USD is traded between residents.

Second Life has seen remarkable growth. By the end of 2008, Second Life user hours increased by 61% over 2007 (Linden, 2009). User hours have increased steadily each quarter, culminating in a record-setting 112 million user hours in the fourth-quarter of 2008. From 2007 to the end of 2008, peak concurrent users increased by 31% to 76,000 users, land owned by residents increased by 82%, exchange volume increased by 33%, and user-to-user transactions increased by 54%.

Another virtual world is Activeworlds (www.activeworlds.com), an education-based virtual world. Activeworlds hosts a Universe of more than 1,000 3D virtual reality worlds. In these worlds, an individual can choose from a vast array of avatars that fit his/her personality (or perceived personality). Users can then move about, play online games, shop and make friends with people from all over the planet, stake claim to a piece of land, and build their own virtual home, mansion, estate or castle. The most popular world is "AlphaWorld," which consists of virtual real estate on which users can create virtual structures using objects from Activeworlds' library of more than 6,000 objects and textures (Activeworlds Overview, 2009). As of January 2005, users had placed more than 170 million building blocks on AlphaWorld. The developers of Activeworlds believe that 3D Internet applications provide enhanced richness that would be of interest to users developing Internet-based advertising, distance learning, training, entertainment, e-commerce, chat and other online activities. By February of 2008, more than 2 million individual users worldwide had downloaded the browser and visited the site and 70,000 users had registered to be a "citizen" of the Active Worlds universe (Activeworlds Index, 2009). Users who do not register are called "tourists" and have less capability than citizens. It is also estimated that more than 80 educational institutions have a home in Activeworlds (Wood et al., 2008). Overall, there are generally more than 1,000,000 hits to the universe server per day, and more than 500 new users download the browser each day.

A third virtual world can be found at There.com. There was founded in 2005 by entrepreneur Michael Wilson and is owned by Makena Technologies, Inc., a privately held corporation headquartered in Silicon Valley, CA. (There Company Info, 2009). There is for ages 13 and up and is designed to allow members to enjoy a variety of activities, from vehicle races to fashion shows to paintball games. Members can create their own character ("avatar"), own and decorate virtual homes, participate in trivia contests and other games, chat with friends, and participate in a variety of themed events. There is a non-violent online experience in which avatars cannot be hurt or killed (What is There, 2009).

One may ponder why an individual would spend money for products that essentially are not real. Interestingly, users purchase items in virtual worlds for many of the same reasons individuals purchase expensive cars and clothing in the real world, to impress others and flaunt social status. Even in Second Life, social hierarchy and status do exist. The economic crossover from virtual money (e.g. Second Life's Linden dollars) to actual currency has not gone unnoticed by entrepreneurs (Acello, 2008). Anshe Chung, the avatar persona of German languages teacher Ailin Graef, made the cover of *Business Week* in 2006 for becoming the first Second Life millionaire (literally, in U.S. dollars) by purchasing and building up large areas of land, then re-selling them at a profit (Hof, 2006).

Faculty are entrusted with teaching and encouraging positive behavior and determining the optimum teaching pedagogy. This study was therefore undertaken to explore the state and incidence of undergraduate virtual world participation and electronic social networking. Is virtual world and e-socializing important and have students decided to participate? These results will provide a basis for further research in investigating the usefulness of virtual worlds as a teaching platform and tool.

**PREVIOUS RESEARCH**

Prior research has examined factors such as social norms, teamwork, information technology undergraduate student knowledge, and information system faculty participation.

A recent observational study by Yee et al. (2007) of the Second Life virtual community attempted to explore whether or not social norms of gender, interpersonal distance (IPD), and eye gaze transfer into virtual

environments. The purpose of the research was to better understand if, and to what degree, a medium will change the way an individual will behave or respond to specific behavior and if the equilibrium effect could be documented in an online environment. According to Equilibrium Theory, the degree of intimacy between two individuals is maintained by compensatory changes in gaze or IPD. A triggered script was utilized to collect data from avatars and to notify observers when two or more individuals were interacting so that observations could be made. The sampling produced 417 snapshots from which the researchers extracted more than 8,000 unique dyads engaged in social interaction. Results indicate that many established social findings from typical face-to-face interactions did transfer into virtual environments and that social interactions in online virtual environments such as Second Life are governed by the same social norms as social interactions in the physical world. For example, as found in traditional research on gender differences in social interaction, IPD was significantly larger in the male-male dyads than in female-female dyads observed.

Because virtual worlds are immersive and experiential and thus have many of the characteristics that facilitate learning, Wagner performed a study in an academic environment (2008). The research examined a class entitled "Virtual Organizations and Global Teamwork" in which students were required to utilize Second Life to build a virtual organization for economic gain. Students were required to rent real estate, develop a service, build a product, attract customers to generate revenue, and report on their experiences. Four types of learning emerged: e-business insights, systems development insights, virtual work insights, and IT planning insights. Furthermore, all groups in the 4-week exercise were successful in creating revenue-oriented businesses generating Linden dollars. Twenty-nine anonymous post-assignment surveys revealed that students found the workload in the assignment highly demanding, but reported favorably on the assignments learning value and recommended the assignment be used in the future.

Two additional surveys were conducted in 2007 within the field of Information Systems. The first survey was administered at annual conference of Association Information Technology Professionals (Holmes et al., 2008). Of the 196 questionnaires, 78% were undergraduate students. Results indicate that only 28.6% had heard of Second Life and only 3.1% had played with Second Life. The second survey was administered at international information systems academic conference. Researchers found that 38.5% had heard of Second Life and with regard to using simulations in their class, 5.2% used simulations often, 25.6% never used them, 17.9% were thinking about it, and 35.9% had used some. The researchers concluded that faculty members have not generally participated in virtual communications but most respondents, however, were in the information technology field.

Finally, McGann and Annabi (2008) even introduced a research framework to assess the viability of virtual communities of practice as an effective means of knowledge management. To promote this stream of research, virtual teams are mapped into the framework.

## RESEARCH DESIGN

This study employs a survey research design. The research was conducted at a private, northeastern U.S. University. A Student Virtual World Behavior instrument was developed and administered during the last week in the Fall 2008 semester to students enrolled in a School of Business course. A convenience sample of class sections was selected. The courses included Business Information Systems, Accounting Information Systems, Introduction to Managerial Accounting, Business and Beyond, and Business Policy.

The survey instrument was utilized to collect student demographic data and examine student behavior with regard to virtual worlds and electronic social groups. The survey requested that each student estimate the number of hours per week spent visiting virtual world or social group sites and where each student has posted his/her personal information. In addition, students were prompted to identify the degree of importance that virtual worlds and social sites are to him/her. All surveys were anonymous and students were informed that results would have no effect on their semester grade.

## RESULTS

A sample of 218 usable surveys was obtained. Fifty-seven percent were male and 43% were female (Table I). The response rate indicates that respondents are relatively equally distributed by class. Thirty percent of students were Freshmen, 26% were Sophomores, 18% were Juniors, and 26% were Seniors (Table II). Student majors included accounting (19%), marketing (30%), finance (10%), undecided business (20%) and non-business/other (21%).

TABLE I. RESPONSE RATE BY GENDER

| | Percentage | Count |
|---|---|---|
| Male | 57% | 125 |
| Female | 43% | 93 |
| Total | 100% | 218 |

TABLE II. RESPONSE RATE BY ACADEMIC CLASS

| | Percentage |
|---|---|
| Freshmen | 30% |
| Sophomore | 26% |
| Junior | 18% |
| Senior | 26% |
| Total | 100% |

To examine behavior, each student was requested to estimate the number of hours per week that he/she visited various virtual worlds and social sites. Table III details the activity, percentage of students who indicated that activity, and number of hours. Results show that 1% of students visit Second Life and 2% visit other virtual worlds each week. In addition, 87% of students visit Facebook, 18% visit MySpace and 7% visit social groups such as linkedln and sports interest groups. In terms of time, 2.0 hours per week was spend in Second Life, 2.5 hours per week visiting other virtual worlds, 15.3 hours per week visiting Facebook, 10.6 hours visiting MySpace, and 9.4 hours visiting other social sites. Moreover, 4% indicated having an avatar and 78% of respondents indicated posting information about themselves on Facebook. Twenty-three percent post information on MySpace and 3% post on other sites. Overall, 87% of undergraduates indicated visiting a virtual world or using at least one social site. In addition, 18.2 hours were expended each week visiting virtual worlds or social sites. In terms of either having an avatar or site participation, there were no significant gender differences. When examining respondent perception of virtual world importance with the various behaviors, there was a correlation significant at the .01 level with having information posted on Facebook. When examining respondent perception of social site importance with the various behaviors, there was a correlation significant at the .01 level with having information posted on MySpace and a correlation significant at the .05 level with visiting Facebook and having information posted on Facebook.

TABLE III. E-SOCIALIZING BY TYPE

| Activity | Percent of Students | Hours Per Week | Chi-Square Gender Differences | Pearson Correlation with Virtual World Importance | Pearson Correlation with Social Importance |
|---|---|---|---|---|---|
| Visit Second Life | 1% | 2.0 | | -.019 | .026 |
| Visit other virtual worlds | 2% | 2.5 | | -.019 | .026 |
| Visit Facebook | 87% | 15.3 | | -.042 | .147* |
| Visit MySpace | 18% | 10.6 | | .066 | .103 |
| Visit another social site | 7% | 9.4 | | .032 | .021 |
| I have an avatar | 4% | | .079 | .136 | -.059 |
| I have my information posted on Facebook | 78% | | .413 | -.220** | .170* |
| I have my information posted on MySpace | 23% | | .827 | .059 | .186** |
| I have my information posted on another social site | 3% | | .444 | .043 | -.016 |
| Overall visiting average | 87% | 18.2 | | | |

** Correlation is significant at the .01 level (2-tailed)

* Correlation is significant at the .05 level (2-tailed)

The study next examined behavior by gender (Table IV). Results indicate that two percent of males and one percent of females visit virtual worlds but 83% of males and 92% of females visit social sites. Moreover, 77% of males and 82% of females post personal information on social sites. Overall, 86% of males and 95% of females exhibited at least one of the behaviors.

TABLE IV. ACTIVITY BY GENDER

| Activity | % of Males | % of Females |
|---|---|---|
| Visit virtual worlds | 2% | 1% |
| Visiting social sites | 83% | 92% |
| Posting personal information on a social site | 77% | 82% |
| Overall | 86% | 95% |

Table V illustrates the respondent attitude regarding the importance of virtual worlds. Results indicate that 77% of males indicate that virtual worlds are not important to them. Moreover, 6% feel that virtual worlds are somewhat important and 2% feel that virtual worlds are very important. With regard to females, 77% indicate that virtual worlds are not important to them while 2% feel that virtual worlds are somewhat important and 0% feel that virtual worlds are very important. A Pearson Chi-Square test indicates no significance difference among gender with regard to the importance response.

TABLE V. IMPORTANCE OF VIRTUAL WORLDS BY GENDER

| | Not | Somewhat | Very | No Response | Chi-Square Gender Differences |
|---|---|---|---|---|---|
| Male | 77% | 6% | 2% | 15% | |
| Female | 77% | 2% | 0% | 20% | |
| Overall | 77% | 5% | 1% | 17% | .219 |

Finally, the study found that 36% of males indicate that social sites are not important to them (Table VI). Moreover, 41% feel that social sites are somewhat important and 10% feel that social sites are very important. With regard to females, 25% indicate that social sites are not important to them while 55% feel that social sites are somewhat important and 12% feel that social sites are very important. A Pearson Chi-Square test indicates no significance difference among gender with regard to importance response.

TABLE VI. IMPORTANCE OF SOCIAL SITES BY GENDER

| | Not | Somewhat | Very | No Response | Chi-Square Gender Differences |
|---|---|---|---|---|---|
| Male | 36% | 41% | 10% | 14% | |
| Female | 25% | 55% | 12% | 9% | |
| Overall | 31% | 47% | 11% | 11% | .120 |

**CONCLUSIONS**

Overall, this study is useful in providing a better understanding of the state of student virtual world participation and online socializing. Results show that only one percent of students visit Second Life, 2% visit other virtual worlds, and 4% have an avatar. However, 87% of students admit to using electronic social sites. Eighty-seven percent visit Facebook, 18% visit MySpace, and 7% visit other sites. On average, 18.2 hours per week is expended visiting these sites. Respondents indicated spending 2 hours in Second Life, 2.5 hours in other virtual worlds, 15.3 hours visiting Facebook, 10.6 hours visiting MySpace, and 9.4 hours visiting other sites per week.

The study also found that having information on Facebook is negatively correlated with virtual world importance. Visiting Facebook, having information posted on Facebook, and having information posted on MySpace was positively correlated with social site importance. In terms of gender, two percent of males and one percent of females visit virtual worlds. Eighty-three percent of males and 92% of females visit social sites.

Seventy-seven percent of males and 82% of females post information on a social site. Overall, 86% of males and 95% of females visit virtual worlds, visit social sites, or post personal information on a social group site.

Results also illustrate that only 6% of students perceive that virtual worlds have any importance to him/her. In terms of gender, 8% of males and 2% of females indicate that virtual worlds are at least somewhat important to him/her.

Finally, results indicate that 58% of students perceive that social sites have any importance to him/her. In terms of gender, 51% of males and 67% of females feel that social sites are at least somewhat important to him/her.

There are two important implications as a result of these findings. First, it appears that with regard to undergraduates, the virtual world is in its infancy. Although students heavily utilize social sites, few participate in virtual worlds. Only 1% visit Second Life, 2% visit other virtual worlds, 4% have an avatar, and 6% indicate that virtual worlds are at least somewhat important to him/her. On the other hand, 87% of students visit Facebook (expending an average of 15.3 hours per week), 78% of students have information posted on Facebook, and 58% of students indicate that social sites are at least somewhat important to him/her. These virtual world participation results are somewhat lower than the results from the Holmes et al. study but the Holmes et al. study involved technology students and information system faculty while this study measured behavior of students in all business disciplines. It would be plausible to hypothesize that those with a technology background would be more aware of the newest technologies. In terms of the radical disparity between undergraduate participation in virtual worlds and involvement in electronic social sites, it is possible that social sites satisfy the student desire for socialization. Moreover, because social networking is an older technology and students are comfortable with it, it may be that virtual world networking has simply not been explored by undergraduates.

A second implication is that gender is not a factor with regard to virtual world participation and social networking. There were no significant gender differences with regard to having an avatar, having information posted on a social site, degree of importance of virtual worlds, and degree of importance of social sites. In addition, there were nearly identical participation percentages by gender for visiting virtual worlds, visiting social sites, and posting information.

The limitations of this study are primarily a function of sample size, sample distribution, and type of research. A larger sample size, more equal distribution among academic class and gender, and use of additional universities would increase the robustness of results. Another limitation relates to the self-reported nature of the survey. The Wagner study suggests that virtual worlds can be utilized to teach business concepts but further study is needed to explore the pedagogical benefits of introducing virtual worlds into the classroom. In addition, future research is needed to examine how to introduce virtual worlds into education, given the student's apparent lack of awareness or interest in this technology.

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