CAREER MOTIVATIONAL BELIEFS AND TEACHERS' PATTERN OF BEHAVIOR TOWARD SCIENCE TEACHING

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ABSTRACT

The descriptive survey method was utilized in the analysis of career motivations and beliefs of secondary school science teachers in Isabela, Philippines and revealed that the level of career motivational beliefs is high among teachers who stayed in the profession for long years and those with designations that earn them respect and superiorityin the workplace. Thesignificant relationship between career motivation and motivational beliefsuggest the primary pattern of teachers' behavior toward science teaching. The area of intersection between these variables as supported by the significant predictive value of career motivation point out that the science teachers in the study are mostly vulnerable,the kind of persons who may be functioning but are at risk under stress. It is therefore concluded that career motivation and beliefs can predict the kind of behavior of teachers in the science teaching profession.

Keywords: Career motivation, Motivational belief, Science teaching behavior, Teachers' behavior pattern.

INTRODUCTION:

Science teaching is a multifarious task that demands for the effective promotion of scientific literacy and Science teachers must be professionally trained to get them well prepared in their subject areas to affect desired science learning. They must also stay abreast of current technological advances affecting society in order to keep their students engagedtoward continual search forscientific knowledge.

Teachers whose beliefs are built upon positive motivational circumstances could be the solution to the impending problems on the decreasing level of science achievement of learners. Teachers as agents of education reforms need strong motivational beliefs in the pursuit of improving the quality of science learning. However, earlier researches in some parts of the world conclude that the overall levels of teacher job satisfaction and motivation are low; that teachers are highly dissatisfied with their remuneration and other conditions of service (Kadzamira and Chibwana 2000, Kadzamira et al 2001, Tudor-Craig 2002, Chimwenje 2003). Motivational beliefs can therefore likely affect behavior in one's teaching performance. Hence, career motivations and beliefs should be explored in order to determine the pattern of behavior in teaching similarly to what Ford (1992) theorized that capability and context beliefs combine to form PAB (Personal Agency Belief) patterns that regulate the level of motivation a person has in reaching a target goal.

LITERATURE REVIEW:

Exploring the motivation for teaching is essential in understanding how teachers and prospective teachers can be attracted and retained to the teaching profession and how could they become more engaged and committed to their training and profession (Sinclair, Downson, and McInemey, 2006). On another perspective, Talisayon (1998) considered motivating science teachers as the most important and challenging; that by motivating science teachers to love their subject and students, to innovate and commit themselves whatever circumstances could be as important as the motivation exercises in the classroom. The beliefs behind the circumstances are actually the controlling factors in one's decision in life. Ford (1992) explained that belief systems are difficult to change, we can provide positive circumstances for people to reflect upon their own beliefs but ultimately people act upon his or her own belief systems. Following the same context, career motivation that is built upon belief systems or vice versa, beliefs founded on motivating circumstances could be lasting. Recent studies have tried to explore whether conventional belief on career motivation still holds true in the increasingly variable society today. Research trends examined by Adams (2011) include: why are students discouraged from choosing a science career, and how long has this hermeneutical "way of thinking" been going on, what or who motivates students to groom themselves for a science career, and does a gender or race bias exist? Preliminary pilot studies indicated a consistently strong bias towards parental influence, however a string of lived factors also weigh in.

On the other hand, career motivation factors for science teaching could be outweighed by prevailing school culture. According to sociologists, current school environments are a reward-scarce setting for professional work and often seem to work against teachers' best efforts to grow professionally and improve student learning (Peterson 1995). Much of teachers' work is carried out in self-contained classrooms that isolate them from the support of their colleagues. Because of this organizational structure, teachers are difficult to supervise, do not receive regular feedback from others, and often find it hard to collaborate.

According to Kadzamira (2003), clear motivational differences exist between qualified and unqualified orunderqualified teachers at government schools. At both primary and secondary schools, unqualified teachers receive considerably lower salaries even though their workloads are usually the same, if not heavier, than they are for qualified teachers. While unqualified teachers can acquire the necessary professional qualifications, it usually takes such a long time for them to be considered for training that many become demotivated.The study of Kadzamira has established serious motivational problems affecting teachers in Malawi at both primary and secondary levels, which have been acknowledged by their government officials, trade union leaders, and other key stakeholders. Kadzamira concluded that the levels of teachers' motivation have resulted in increased teacher absenteeism, high teacher turnover and professional misconduct which have affected performance and threaten to affect the achievement of quality education in Malawi.

Mansour, (2009) explained that teachers' beliefs form part of the process of understanding how teachers conceptualize their work which in turn is important to the understanding of teachers' practices and their decisions in the classroom. In an earlier study of Mansour, (2008a), it reported that there is an interactive relationship between knowledge and beliefs. The settled or developed teachers' beliefs act as an information organizer and priority categorizer, and in turn control the way it could be used. In the interactions between

knowledge and beliefs, beliefs control the gaining of knowledge and knowledge influenced beliefs. According to Tsai (2002), beliefs of many teachers, who hold traditional views of teaching science, learning science, and the nature of science, may stem from the problem of their own school science experience. Science classes, laboratory exercises, and relevant activities in teacher education programs may have reinforced these "traditional" views.

The current state of science education in the Philippines, particularly in the basic education level, lags behind other countries in the world. The results of the Second International Science Study (SISS) and Third International Mathematics and Science Study (TIMSS) placed the Philippines in disadvantaged positions among participating nations. In the SISS, the Philippines ranked almost at the bottom of the list of seventeen (17) nations which took part in this large-scale evaluation of educational achievement. Similar outcomes were revealed in the 1995, 1999 and 2003 TIMSS. Furthermore, students' performance in National Achievement Tests shows that aside from Mathematics, Science continues to be the most difficult field of study in basic education. These ideas on the teaching profession and the state of science education in the Philippines pose the need to discover beliefs on science teaching since, both motivations and beliefs could be the power source of teachers in pursuing their profession.New theories of teacher motivation explain that merit pay and other incentive policies meant to provide external incentives such as financial rewards, advancement opportunities, and workplace variety did not adequately resolve the problem of teacher satisfaction. Frase (1992) offers one reason why measures relying on external rewards have been insufficient; he explained that there is overwhelming research evidence that teacher enters teaching to help young people learn, and that the most gratifying reward is accomplishing this goal, and the work-related factors most important to teachers are those that allow them to practice their craft successfully.

This theoretical basis of motivation and satisfaction however, heighten the challenge among science teachers as the deterioration of science achievement in basic education continues. Along with the problem on low science achievement, the Philippine government offered some solutions in upgrading the standards of education as a whole. Recent education reforms include the adoption of UBD (Understanding by Design) program and at present, the K+12 and use of mother tongue programs. Through the years, the Philippine education system is proactive on the issue of improving the quality of education it offers, several programs had been tried out, yet the search for a better educational program continues with the aim of trying to fit better learning with the changing needs of the learners in an increasingly scientifically and technologically oriented global environment. While education reforms address the changing needs of learners, there exist naturally some resistance to these reforms among the implementing classroom teachers.

All education reforms are ideally set for the improvement of the quality of education but much of this aim may be spoiled by the amount of influences brought by negative context beliefs in teaching and inadequate motivation among teachers in the implementation of the programmed reforms. Indeed, discovering motivational factors in pursuing a career in science teaching for sustained and improved performance is a complicated challenge. According to Bandura (1997), beliefs are thought to be the best indicators of the decisions people make throughout their lives. Pajares (1992) collaborates with the idea and explained that clusters of beliefs around a particular situation form attitudes, and attitudes become action agendas that guide decisions and behavior. This could mean that people act upon what they believe as would the prospective science teachers possess beliefs regarding their choice of future professional life. The study of Yong Yu (2011) on "pre-service teachers' motivations for choosing a teaching career revealed that the pre-service teachers chose a teaching career due to the influence of such factors as beliefs of teaching ability, intrinsic, social, and personal values of teaching, perception of teaching, prior learning and teaching experiences, and social influence. Whereas Adams (2011) explained that science career motivation is influenced by parents or family and some other environmental factors which include youth experiences, club or organization membership, high school or college classes, teachers, and salary expectations.

Science teaching context beliefs according to Ford (1992) encompass not only the students but also administrators, parents, other teachers, institutions, organizations, and the physical environment. This means that, science teaching outcome expectancy refers to a teacher's belief that effective science teaching will help children learn science. Ford therefore theorized that capability and context beliefs combine to form PAB (Personal Agency Belief) patterns that regulate the level of motivation a person has in reaching a target goal. Ford provided brief characterizations of each PAB pattern; these are (1) ***robust*** pattern indicates a strong purpose or outlook; a person with a (2) ***tenacious*** pattern displays strength in dealing with challenge. A (3) ***modest*** pattern denotes a moderate estimate of one's ability, yet a positive view of the environment. These three patterns are exhibited in the most effectively functioning people; that the less functioning patterns include (4)

accepting or antagonistic, and (5) ***vulnerable*** patterns. People exhibiting these patterns display high capability beliefs but are very negative about their environment. The only difference between accepting and antagonistic patterns is that the accepting person endures difficulties quietly with courage, whereas the antagonistic person actively expresses annoyance and hostility. A vulnerable person may be functioning but is at risk under stress. A person with a (6) ***fragile*** personal agency belief pattern may be intact for the immediate future but could be easily broken. A (7) ***discouraged*** person maintains some confidence and hope, a (8) ***self-doubting*** person lacks faith in a chance for success, and a (9) ***hopeless*** person believes in no potential for improvement. These last three patterns are commonly displayed in people who are struggling with effective functioning(Lumpe, Haney, and Czerniak, 2000). But Ford (1992) noted that no single PAB pattern is best for all circumstances. However, for most circumstances effective functioning is affiliated with robust, tenacious, or modest PAB patterns.As PAB patterns regulate the level of motivation a person has in reaching a target goal, it can also gauge teachers' beliefs about the potential influence of specific environmental factors on their science teaching behaviors.

The present study therefore aimed to assess the level of career motivation and in pursuing a profession in science teaching and explore whether there exist significant relationships among them. The study also aimed to evaluate the predictive value of career motivation for possible basis in predicting the level of belief in pursuing the profession and to serve as basis in the identification of PAB patterns describing the level of motivation and teachers' behavior toward the realization of target goal in science education reforms, which is to possibly bring about desired science achievement of learners.

STATEMENT OF THE PROBLEM:

The study determined the career motivational beliefs in pursuing a science teaching profession and patterns of behavior of science teachers in selected high schools in the province of Isabela, Philippines in the school year 2012-2013.Specifically, the study answered the following problems: a) What is the level of career motivation of science teachers when grouped in terms of the selected variables such as: age, sex, civil status, bachelor's degree and major, highest educational attainment, position and designation, length of service, subjects taught, and type of school workplace; b)What is the degree of motivational beliefs of teachers in pursuing a science teaching profession when they are grouped in terms of the selected demographic variables? c) What are the difficulties that affect motivation in pursuing a science teaching profession? d) Is there a significant relationship between career motivation and beliefs in pursuing a science teaching profession? e) Does career motivational belief predict the pattern of behavior toward science teaching?

METHODOLOGY:

The descriptive survey method was employed in the study. The data were gathered using a survey questionnaire and treated statistically to test the relationship and the predictive value of the independent variable career motivation with the dependent variables which were the beliefs about science teaching.The one hundred forty two (142) science teachers from selected private and public high schools in the province of Isabela composed the respondents of the study. The schools were selected through cluster sampling

RESULTS AND DISCUSSION:

The career motivations of the science teacher respondents when grouped in terms of age, sex, and civil status are consistently at the motivated level as shown in Table 1. The degree of motivation is slightly higher among senior teachers from aged fifty (50) to sixty (60) which were ranked one (1) to three (3). The male respondents showed slightly higher computed mean than female but both are in the motivated level. When the respondents were grouped by civil status, the single marital status ranked first followed by widow/er, and last is by married status.The career motivations of the respondents imply how much they desired to pursue their course to become science teachers. Across age levels, it could indicate that the amount of driving force to pursue a career among older students is a little higher than the middle-aged groups. The male science teachers are outnumbered by females but they show slightly higher motivation in pursuing the career. The married science teachers showed that motivations in pursuing a career in science teaching could be slightly lower but not really different compared with the single and widowed marital statuses, as supported by the minimal standard deviations.

Table 1: Descriptive statistics on career motivation of science teachers in terms of age levels, sex, and civil status

Category	N	Mean	SD	Rank	Interpretation
Age: 20- 24	9	3.1678	.29660	4	Motivated
25-29	17	3.0159	.42141	7	Motivated
30-34	33	3.0788	.26259	6	Motivated
35-39	27	3.1278	.37427	5	Motivated
40-44	20	2.9410	.28729	9	Motivated
45-49	16	3.0144	.23563	8	Motivated
50-54	12	3.1933	.47429	3	Motivated
55-59	7	3.3629	.27891	1	Motivated
60 +	1	3.2700	.	2	Motivated
Sex: Male	33	3.1991	.31741	1	Motivated
Female	109	3.0499	.33819	2	Motivated
Civil Status: Single	35	3.1643	.33123	1	Motivated
Married	104	3.0572	.34016	3	Motivated
Widow/er	3	3.1033	.30827	2	Motivated

The science teacher respondents have similar degree of career motivations regardless of their earned bachelor's degree and area of majorship in science including those teachers who finished a degree other than science as shown in Table 2. The table also showed that teachers who hold majorship in physics and biology obtained higher ranks of one (1) and two (2) respectively but the mean scores of both categories are not distantly deviated from the rest of the teachers. In the case of teachers' highest educational attainment, it could be observed that the computed mean is slightly higher while the teachers are working in progress toward a higher degree but lags a little after a higher degree is completed. Science teachers with PhD units have higher computed mean compared to teachers who already completed the degree. Similarly, teachers with earned units for master's degree and those who may not have started a higher degree but probably wanting for it, showed higher computed mean than the master's degree holders, the standard deviations however, denote that the teacher respondents are not distantly varied in the degree of career motivations.The academic rank or position and designation of science teachers showed a pattern on one's outlook for career motivation as reflected by the computed means in Table 2. It can be noted from the table that teachers' career motivation is higher when the position or designation held is higher than the preceding position such as between Teacher 2 and 1; likewise with Master Teacher 1 compared with Teacher 3; and between science coordinator or department head in science compared with Master Teacher 2.

Table 2. Descriptive statistics on career motivation of science teachers in terms of bachelor's degree and major, highest educational attainment and academic rank or position and designation

BS and Major	N	Mean	Std. Dev	Rank	Interpretation
BSE Gen Sci	89	3.0704	.35092	4	Motivated
BS/E Bio	18	3.1117	.21404	2	Motivated
BS/E Chem	12	3.0267	.31032	5	Motivated
BS Physics	6	3.3117	.30295	1	Motivated
Other than Scie.Ed	17	3.0906	.40499	3	Motivated
Highest Ed. Attnmt					
College degree	66	3.0755	.31099	4	Motivated
MA with units	30	3.1090	.40041	3	Motivated
MA grad	38	3.0676	.32693	5	Motivated

Ph D with units	6	3.1600	.46789	1	Motivated
Ph D Grad	2	3.1150	.28991	2	Motivated
Position					
T1	70	3.0729	.32840	4	Motivated
T2	7	3.0843	.41789	3	Motivated
T3	45	3.0536	.31141	6	Motivated
M1	12	3.0683	.32209	5	Motivated
M2	3	3.0900	.46163	2	Motivated
Sciecoor./Dept. head	5	3.5640	.39074	1	Highly Motivated

The highest level of career motivation among the science teacher respondents is observed among teachers with the longest length of service in the teaching profession (Table 3). These teachers must have realized that their career has come to its fulfillment and that their career has put them to some degree of accomplishment teaching the youth about science. Teachers who teach more than one subject area of science showed higher computed mean than those who teach only one subject area. Whereas the private school science teachers endorsed higher career motivation scores than those in the barangay or vocational and national high schools as supported by the computed mean scores shown in Table 3.The preceding tables (1, 2) and Table 3 below therefore show that career motivations of the science teacher respondents as a whole could be triggered positively by the prestige of one's held designation and length of service. Both of these factors indicate that respect earned from one's position either through seniority in the service or superiority of responsibility bring about positive outlook towards the science teaching career.

Table 3. Descriptive statistics on career motivation of teacher respondents when grouped by 3 length of service, science subject taught, and type of school workplace

Length of Service	N	Mean	Std. Dev	Rank	Interpretation
2mos-4 yrs	20	3.1300	.33587	4	Motivated
5-9	41	3.0829	.32207	6	Motivated
10-14	26	3.0285	.28200	8	Motivated
15-19	34	2.9894	.34762	9	Motivated
20-24	4	3.0800	.26771	7	Motivated
25-29	9	3.1067	.36146	5	Motivated
30-34	6	3.5433	.25967	2	Highly Motivated
35-39	1	3.8200	.	1	Highly Motivated
40 +	1	3.2700	.	3	Motivated
Subjects Taught					
Gen/IntegSci	35	3.0746	.31867	5	Motivated
Bio	23	3.0261	.28996	6	Motivated
Chem	19	3.0032	.30743	7	Motivated
Physics	24	3.0892	.32047	4	Motivated
Combi 2	33	3.1285	.40295	3	Motivated
Combi 3	3	3.1500	.36373	2	Motivated
Combi 4/all	5	3.3820	.38271	1	Motivated
Type of School					
Private	33	3.2245	.37523	1	Motivated
Brgy/Voc	21	3.1514	.29411	2	Motivated
NHS	88	3.0161	.31716	3	Motivated

The science teacher respondents have positive beliefs in pursuing their profession regardless of age level, sex, and civil status as shown by the computed mean scores in Table 4. The minimum standard deviation in each category supports the closeness of their beliefs.

Table 4. Descriptive statistics on beliefs in science teaching profession by the respondents when they are grouped by age, sex, and civil status

Age	N	Mean	Std. Dev.	Rank	Interpretation
20-24	9	3.2000	.27189	4	Positive Belief
25-29	17	3.2606	.29406	3	Positive Belief
30-34	33	3.0564	.28230	8	Positive Belief
35-39	27	3.2889	.38922	2	Positive Belief
40-44	20	3.0670	.32360	7	Positive Belief
45-49	16	2.9844	.29862	9	Positive Belief
50-54	12	3.3417	.46142	1	Positive Belief
55-59	7	3.0757	.29619	6	Positive Belief
60 +	1	3.1500		5	Positive Belief
Sex					
Male	33	3.2118	.37763	1	Positive Belief
Female	109	3.1355	.33394	2	Positive Belief
Civil Status Single	35	3.2171	.34348	1	Positive Belief
Married	104	3.1336	.34801	2	Positive Belief
Widow/er	3	3.0900	.19157	3	Positive Belief

There is strong positive belief in pursuing science teaching profession among teachers that hold designation as either science coordinator or as head of the science department (Table 5). This strong positive belief is consistent with their level of motivation in pursuing their career as science teachers. The rank order of teachers beliefs based on bachelor's degree and area of majorship also showed consistent order with career motivation; that the science teachers with Physics as area of majorship consistently ranked first likewise with teachers with major in Biology as second in rank.

Table 5. The teachers' belief when respondents are grouped by bachelor's degree and major, highest educational attainment and academic rank or position and designation

BS and Major	N	Mean	Std. Dev.	Rank	Interpretation
BSE Gen Sci	89	3.1426	.34685	4	Positive Belief
BS/E Bio	18	3.1778	.28489	2	Positive Belief
BS/E Chem	12	3.1725	.35665	3	Positive Belief
BS Physics	6	3.4433	.42193	1	Positive Belief
Other than Scie Ed	17	3.0671	.33931	5	Positive Belief
Highest EducAttainment					
College Degree	66	3.1176	.28036	5	Positive Belief
MA with units	30	3.2167	.39438	3	Positive Belief
MA grad	38	3.1247	.36666	4	Positive Belief
Ph D with units	6	3.3183	.52465	2	Positive Belief
Ph D Grad	2	3.4250	.48790	1	Positive Belief
Position					
T1	70	3.1499	.30054	3	Positive Belief

T2	7	3.0571	.50487	5	Positive Belief
T3	45	3.1053	.35225	4	Positive Belief
M1	12	3.2200	.37885	2	Positive Belief
M2	3	3.0500	.30806	6	Positive Belief
SciCoor/Dept. Head	5	3.6680	.21557	1	Strong Positive Belief

Table 5 also showed that based on computed mean, the science teacher' degree of beliefs on staying in their profession could be in the order of their educational attainment from highest PhD degree to Bachelor's degree in descending order; such rank order however, does not show a difference in the teachers' level of beliefs, since, they all showed similar descriptive interpretation as "positive belief."

Science teachers that were in service from five (5) to nineteen (19) years represent the most number of respondents of this study and showed similar positive belief in pursuing their profession. Meanwhile, the smaller number of respondents that served from nearly three (3) to four (4) decades showed higher computed means than those in the service in relatively shorter time; whereas the type of school workplace did not show a remarkable amount of variation or standard deviation in the degree of motivational belief of the science teachers to pursue their science teaching profession (Table 6).

Table 6. Descriptive Statistics on beliefs of respondents when grouped by length of service, science subject taught, and type of school workplace

Length of Service	N	Mean	Std. Dev.	Rank	Interpretation
2mos-4	20	3.1495	.28023	6	Positive Belief
5-9	41	3.1754	.33540	4	Positive Belief
10-14	26	3.1119	.36782	7	Positive Belief
15-19	34	3.0997	.33546	8	Positive Belief
20-24	4	3.0300	.40546	9	Positive Belief
25-29	9	3.3356	.40041	2	Positive Belief
30-34	6	3.2483	.48885	3	Positive Belief
35-39	1	3.5000	.	1	Strong Positive Belief
40 +	1	3.1500	.	5	Positive Belief
Subjects Taught					
Gen/IntegSci	35	3.0723	.32303	6	Positive Belief
Bio	23	3.0435	.30648	7	Positive Belief
Chem	19	3.1789	.35817	5	Positive Belief
Physics	24	3.2017	.37163	4	Positive Belief
Combi 2	33	3.2133	.35520	3	Positive Belief
Combi 3	3	3.2567	.41041	2	Positive Belief
Combi 4/all	5	3.4360	.19629	1	Positive Belief
Type of School	**N**				
Private	33	3.3197	.35809	1	Positive Belief
Brgy	21	3.1905	.31229	2	Positive Belief
NHS	88	3.0819	.32713	3	Positive Belief

There is similar pattern observed between the degree of career motivations in pursuing a career and the beliefs in pursuing a science teaching profession; that both are more positively perceived by respondents that occupy designations, positions and academic titles that earn respect and high regard for superiority among peers.

On the context of difficulties in pursuing a science teaching profession, the circumstance used to form the setting of responses was on how likely the twenty six factors can occur as difficulties and demotivate teachers in pursuing a science teaching profession; this could rather challenge the teachers' positive beliefs on the same factors.

Table 7 showed that all the factors were considered as somewhat likely to occur as difficulties and that can demotivate them in pursuing a science teaching profession. These factors could have hindered a higher belief in pursuing a science teaching profession among most of the teacher respondents while only a small number of the respondents endorsed a high level of belief toward their profession which was specifically observed among teachers with designation, high educational attainment and those teachers having stayed longer in the profession serving for nearly three to four decades.

Table 7. Computed mean of factors perceived by teacher respondents as difficulties in science career

Factors	Mean (N=142)	Rank	Interpretation
1. Professional staff development on teaching (workshops, conferences, etc.)	2.485	26	Somewhat likely
2. State and national guidelines for science education (standards and goals)	2.584	16	Somewhat likely
3. Support from other teachers (coaching, advice, mentoring, modeling, informal discussions, etc.)	2.542	22	Somewhat likely
4. Team planning time with other teachers	2.577	18.5	Somewhat likely
5. Hands-on science kits (activities and equipment)	2.577	18.5	Somewhat likely
6. Community involvement (civic, business, etc.)	2.549	21	Somewhat likely
7. Increased funding	2.535	23	Somewhat likely
8. Extended class period length (e.g., block scheduling)	2.5	25	Somewhat likely
9. Planning time	2.598	15	Somewhat likely
10. Permanent science equipment (microscopes, glassware, etc.)	2.605	14	Somewhat likely
11. Classroom physical environment (room size, proper furniture, sinks, etc.)	2.654	8	Somewhat likely
12. Adoption of an official school science curriculum (goals, objectives, topics, etc.)	2.676	4	Somewhat likely
13. Expendable science supplies (paper, chemicals)	2.661	6	Somewhat likely
14. Support from administrators	2.633	10	Somewhat likely
15. Science curriculum materials (textbooks, lab manuals, activity books, etc.)	2.725	2	Somewhat likely
16. Technology (computers, software, Internet)	2.725	2	Somewhat likely
17. Parental involvement	2.619	11.5	Somewhat likely
18. An increase in students' academic abilities	2.725	2	Somewhat likely
19. Involvement of the state board of education	2.654	8	Somewhat likely
20. A decrease in your course teaching load	2.577	18.5	Somewhat likely
21. A reduction in the amount of content you are required to teach	2.612	13	Somewhat likely
22. Reduced class size (number of pupils)	2.577	18.5	Somewhat likely
23. Involvement of scientists	2.619	11.5	Somewhat likely
24. Involvement of university professors	2.528	24	Somewhat likely
25. Classroom assessment strategies	2.669	5	Somewhat likely
26. Teacher input and decision making	2.654	8	Somewhat likely
Overall Mean	**2.610**		Somewhat likely

On the correlation between career motivation and context beliefs in science teaching professionthe "motivational beliefs in pursuing a science teaching profession showed highly significant positive correlation with career motivation at computed value of 0.481 at 0.01 level of probability (Table 8). The data implies that the level of career motivation in pursuing a course in science teaching will also tell similar level of motivation in staying with the science teaching profession. The data also implies that the level of career motivation measured among prospective science teachers will most likely tell their level of motivation in continuing the profession when such prospective science teachers will be in the teaching service.

Table 8. Pearson Correlation between career motivation and context beliefs in science teaching

		Career Motivation	Motivational context beliefs	Difficulties
Career Motivation	Pearson Correlation	1	.481**	.097
	Sig. (2-tailed)		.000	.249
	N	142	142	142
Motivational context belief	Pearson Correlation	.481**	1	.048
	Sig. (2-tailed)	.000		.571
	N	142	142	142
Difficulties	Pearson Correlation	.097	.048	1
	Sig. (2-tailed)	.249	.571	
	N	142	142	142
**. Correlation is significant at the 0.01 level (2tailed).				

On the other hand, the context beliefs on difficulties in pursuing a profession did not show significant correlation with career motivation. This means that perceived difficulties cannot change one's level of desire to pursue a career in science teaching. Interestingly, the result of multiple regression analysis to test the predictive value of career motivation is significant at 0.01 level of probability with adjusted R square of 0.226 (22.6%) as shown in Table 9. The adjusted R square of 22.6 % represents the percentage of change in the motivational context beliefs or the chance to stay in the profession as a result in the amount of change in career motivation. It can be stated that for instance, the change in career motivation is at 0.49(x), the predicted chance to affect the level of motivation to pursue a science teaching profession is 1.642.

Table 9. Multiple regression coefficients[a] of career motivation as a predictor in pursuing a science teaching profession

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
						B	Std. Error	Beta		
1	.481[a]	.231	.226	.30333	Constant:	1.642	.234		7.009	.000
					Career motivation	.490	.076	.481	6.488	.000

The highly significant relationship shown in Table 8 and the significant predictive value of career motivation as independent variable (shown in Table 9), serve as bases in the adoption of the personal agency belief (PAB) patterns proposed by Ford (1992) that can describe the implications of one's level of motivation and behavior in science teaching. Hence, Figure 1 describes the prevailing PAB patterns of behavior of the science teacher respondents. Most of the respondents' PAB pattern occupied the region described as "vulnerable" (center; E); the kind of person who may be functioning but is at risk under stress; Barden & Ford (as cited by Lumpe, Haney, and Czerniak, 2000) also explained that the vulnerable PAB pattern is one of the less functioning patterns. Interestingly, there were teacher respondents that showed high career motivation and high motivational context beliefs that are in the better regions of PAB patterns described as "tenacious" (right of center box; F); "modest" (just above the center box; B) and "robust" (top most at extreme right; C). A ***tenacious*** pattern displays strength in dealing with challenge; ***modest*** pattern denotes a moderate estimate of one's ability, yet a positive view of the environment; and the ***robust*** pattern indicates a strong purpose or outlook. These three patterns are exhibited in the most effectively functioning people as explained further by Barden & Ford (as cited by Lumpe, Haney, and Czerniak, 2000).

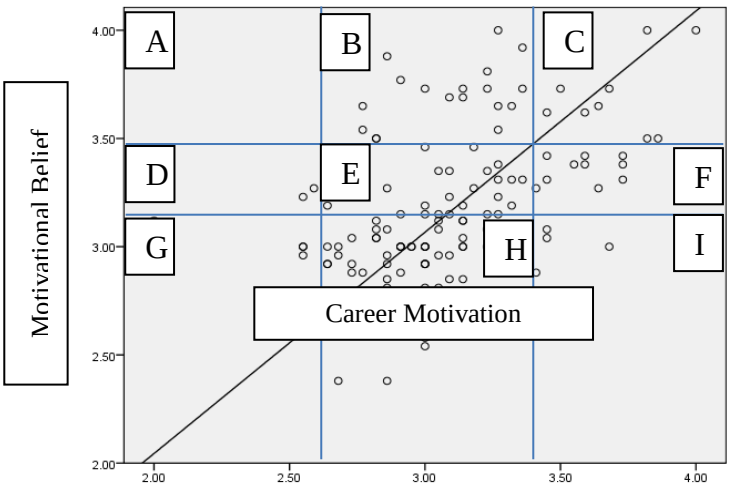

Figure 1: The career motivation(x- axis) is the independent variable; motivational belief in pursuing a science teaching profession(y-axis). The region of intersection describes the PAB patterns (A, B, C, D,E,F,G,H,I).

CONCLUSIONS:

1. The level of career motivation is high among the science teacher who stayed in the profession for long years and those with designations that earn them respect and superiority in the workplace; whereas career motivation is generally similar among teachers who share common characteristics.
2. A motivational belief in pursuing a profession in science teaching is higher among figure heads than teachers without designations.
3. The factors on beliefs about science teaching when set in the demotivating context become somewhat likely as difficulties.
4. The motivation to pursue a science teaching career can be sustained towards pursuing or practicing the profession.
5. The level of motivation in pursuing a career in science teaching can predict the level of motivational beliefs in pursuing the profession. That career motivation paired with motivational beliefs can set the primary pattern of personal agency belief (PAB) describing teachers' behavior toward science teaching.

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