

# Career Aspiration and the Influence of Parenting Styles: A Review of the Literature

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*Abstract:* - There is a growing need for Thailand to promote students' engagements in science, engineering and related professions. This article is a review of the research related to high school students' career aspirations for science, mathematics, engineering and related professions. The paper is organized into following sections starting from the importance of "science" and science education in Thai context, the problem of students' engagements in science, gender differences in students' motivation for high earning science and related professions and the factors that influence high school students' career aspirations (e.g. teachers, peers, parents and others). The literature itself points to the crucial importance of parenting styles shaping students' career aspirations and engagements in science learning.

*Key-Words:* - career aspiration, parenting style, science and engineering education, students' engagements in science, gender differences, Thailand

## 1 Introduction

Actually, science and technology plays an important role for the country development. Also in Thailand, science is a major engine enhancing the country's sustainable improvement. However, there is a major problem which is the reduction of students' persistence in science education even though the labor market demand never decreases. This paper also mentions about the diminishing of Thai high school students' choosing science as a major subject and the gender differences in science education and career choices.

This review of a literature on students' career aspiration purposes on exploring the crucial factors shaping students interested in science, mathematics and engineering. There are many factors influence students' school achievement and their career aspirations such as teachers, peers, school and classroom environments, parents, social values, socioeconomic status, students' experience about science and so forth. For Thai context, this article takes an interest in the family factor to be the crucial factor shaping students' career choices. There are many aspects of the family factors including parents' education, parent's occupations, family's socioeconomic status, and parental authority styles. Baumrind [3] offered three patterns of parenting styles which are authoritarian, authoritative and permissive. These styles affect children on school learning

achievement. Therefore, to study about which types of parenting styles influence on students' career aspirations might increase students' interest in science education. Due to the insufficient science workforce, Thailand should pay a lot of attention to how to promote science education to be more interesting to students. The implication research, for that reason, should be focuses on this point as well.

## 2 The Importance of "Science" and Science Education in Thai Context

In the age of globalization, science and technology plays a vital role to enhance the country's competition potential. To improve this competence the country needs to produce the high potential of workforces due to the fact that people can be both developers and users also. Therefore if people are educated and competent in science and technology their quality of life will be enhanced. In addition the country's economic and social status will be sustainable improved.

In the case of Thailand, the economic structure has changed from agriculture-based economy to industrial-based economy. Science and technology has become the essential subject matter for education as educational reform in 1999. Thai science education emphasizes on scientific knowledge, science technology and

mathematics. Nevertheless, Thailand has not attached importance to the status and the development of its science and technology as it should [4].

The orientations of educational programs in Thai high schools are divided into two programs; 1) general education and 2) technical and vocational education. For the general education there are two sub-program, social science and science program. Office of higher education commission has reported that the number of general program students who entered to universities as science program was much lesser than social science program. The number of high school students from general program was 1,204,057 and the number of science students in universities was 595,772. This number has indicated that only 40 percent of high school students chose science program in the university. They have also reported that the number of students who graduated from university in science and technology was much lesser than social science. In 2007 there were 32 percent of students who graduated science and 68 percent were social science and humanities [23]. The latter graduates have been produces far more than what is needed in the labor market. Ware and Lee [29] said that the demand for qualified scientists and engineers will not abate, and in fact may increase. However, the supply is not sufficient. Bhumirat [4] inferred that this is a critical situation due to the insufficient of science skills which are the major engine of Thailand growth.

### **3 The Problem of Students' Engagements in Science**

There have been several studies exploring the problem of students' engagements in science, engineering and related fields. Speering [27] has found that the number of students who are interested in science has reduced from primary school to secondary school. The consistently research has found that the greatest loss in mathematics, science and engineering (MSE) occurred in the transition from high school to college and from undergraduate to graduate school [15]. They also concluded that "science" is continually losing students at virtually every educational transition point. One of the major problems is females' engagement in science, engineering and related fields is lesser than males' engagement.

### **4 Gender Differences in Students' Motivation for High Earning Science and Related Professions**

The term "Career Aspiration" is referred by Marini and

Rosenberg as "the goal an individual has in relation to obtaining employment in a particular area field" (as cited in [26]). Domenico [8] has mentioned about this terminology in a review of the literature as

"Gutek and Larwood (1987) defined a career as "a series of related jobs within an organization or different jobs within various companies" (p. 9). Career development refers to the many jobs a person holds, and it should represent progress, whether through increased recognition or salary, or the respect one receives from colleagues. The more a person's career progresses in this manner, the more he or she will be judged successful (Gutek & Larwood).

Career aspirations represent an individual's orientation toward a desired career goal under ideal conditions. More simply stated, career aspirations "provide information about an individual's interests and hopes, unfettered by reality" (Hellenga, Aber, & Rhodes, 2002, p. 200; Rojewski, 1996). Adolescence would be an ideal time to study the career development of young women, as many changes occur during this time that strongly influence the formation of career aspirations and preferences (Watson et al., 2002)." p.3

Correll [7] has also mentioned this related terminology as "The career choice process occurs throughout the life cycle as individuals make a series of decisions that have occupational consequences".

Prior studies, moreover, have found that there were the gender differences in students' perceptions about their education and future career. A study conducted by Mendez and Crawford [20] found that boys' career aspiration is limited only to the masculine careers. In contrast, girls express their career aspiration to both male-dominated and female-dominated choices. Particularly in science education and science career choice, previous research has found that there are also gender differences [1, 32] and the underrepresentation of females in science [30]. Prior research has also found a greater proportion of males than females who were interested in science and engineering and a greater proportion of females than males who were interested in humanities and social science majors [32]. Females generally found science uninteresting and scientific lifestyle as perceived by them unattractive but biology was the one exception to females' low interest in science. If they selected science as a major, it often was because it was a necessary step to entering medicine or other health professions due to the desire to help other people [16], especially children and animal [21]. In several large industrialized countries, for example France, Germany and Japan, a gender gap in attitudes about mathematics also appeared; boy's attitudes were more positive than girls. There is some evidence that boys are more likely than girls to participate in

mathematics and science related activities [1]. Previous research has also found that physics is said to have a masculine image that is a deterrent to girls at a time in adolescence when they are forming conceptions about female identity and feminism [17]. Previous research consistently finds that biology is seen by both boys and girls in Thailand as being a subject more suited for girls. On the contrary, physics was perceived to be more suited for boys [10]. While male and female high school seniors are equally likely to expect a career in science or mathematics, males are much more likely than females to expect a career in engineering [1]. Organization for Economic Co-operation and Development [22] has reported that female students in participating countries are far more likely than males to report expected occupations related to life sciences and health, including biology, pharmacy, medicine and medical assistance, dentistry, nutrition, nursing and professions related to teaching. On the other hands, male students more often expect careers associated with physics, mathematics or engineer.

## 5 Factors Influencing High School Students' Career Aspirations

Previous research has found that there are many factors influencing student's career aspirations including family's factors, teachers [5, 14, 29], peers, school environment [33], socioeconomic status, socialization [14] and students themselves [30]. Matope and Makotose [19] have studied about the factors that influence female engineering students' career choice and found that the factors were diverse and inter-linked with others. These factors can be also grouped, for example the research conducted by Young, Fraser and Woolnough [33] in the high school in Western Australia was to study the influence of out-of-school and in-school factors on students' choice of career in science and engineering. The prior research has studied the factors influencing students' career aspirations as following;

### 5.1 Teachers

In the school environment, teacher plays an important role on students' career decision. Prior research has found that students, especially science majors are influenced by high school teachers and guidance counselors in making high school and college plans [14, 29]. Moreover, the study conducted by Brok, Fisher and Scott [5] indicated that "the more dominant and cooperative the teacher is being perceived, the greater students' enjoyment in science is!"

### 5.2 Peers

Socially, relationship and esteem from others are the basically human's needs, especially for teenager they also look for love and acceptance. In school context, students enjoy having relationship with peers and also want to have social competence defined as "the achievement of context-specific social goals that result in positive outcomes not only for the self but also for others" [31]. Social competence with peers at school has been defined as three specific ways; the degree of peer acceptance, peer group membership and correlates of friendship. The literature conducted in 2007 about the influence of peer groups has mentioned about the problem of the high school student absenteeism and the solutions. One of the solutions is to include all peer identity groups, both dominant and marginalize group, in school assemblies to give them a feeling of belonging and ownership, also to encourage them to attend the class [13]. The important factor influencing high school students is the peer. Harris (1996) also claims that "peer groups are more powerful than parents in shaping value" (as cited in [13]).

### 5.3 Parents

Parents have the strong impact on their children and the potential to shape their orientation toward achievement. Pomerantz, Grolnick and Price [24] indicated that there are three distinct parents' roles in how children approach achievement; first, parents' behavior in children's schooling; second, parents' perceptions of children achievement; and third, parental affect which is the relationship between parents and children. Parents' behaviors can be described in three dimensions as first, parent involvement referred as "the parents' provision of important resources to their children" (p. 261). The parental involvement includes the activities which parents participate with their children, both in the school and family activities for example talking to their children which may influence their thinking, paying attention to their homework, taking them to the museum to make them have more experience, attending school activities and so forth. In 1983 elementary school study, Epstein has found that the more parents involve in children schooling, the better in homework habits the children are (p. 263). The second dimension of parents' behavior is the parenting structure which is referred as using guidelines, limitations and rules for the children. Third, parents' autonomy support has focused on the way which parents use to allow and encourage children to design their own environment.

In students' career aspirations and choices, especially high school students, the family environment also has an influence upon their decision including parental

occupations [22, 28], parental education [9], socioeconomic status [29], parental beliefs and so forth. Consistently, children also see their parents as the persons who have the greatest impact on their academic achievement and they tend to change their choices if they do not receive the support from their parents [18].

Previous research has also shown that, mother has more impact on their children than do fathers [25], a small study conducted by Stevens and Mason [34] in one rural school in Western Australia found that the “main influence on the career choices have come from members of the students’ nuclear families, particularly from mother (as cited in [33]). Consistently in Thailand, Engelhard [9] has particularly studied about the relation of the maternal factors and their children and found that mothers’ education have an impact on their daughter. The higher mother’s education is, the more interested in mathematic activities the daughter is.

## 6 The Critical Factors Shaping Students’ Career Aspirations

All factors mentioned above have an impact on shaping students’ academic achievement and career aspirations. These factors are not independent but related to each others. Teacher and school environment play a vital role for students and when becoming adolescences they want others which mean parents, teachers and peers to accept them as an adult. Parents have been found to be important role models in adolescent career development (as cited in [2]). Students see their parents as the person who is the most important person in their life when they were children. Previous research has studied about the parental role for their children in career planning and found that parents may perceive themselves as supportive, informative and educative roles. Supportive role means to provide supportive environment in which students can talk and share their career options. Parents also perceive themselves as the person who can give their child information about careers and as being educators specifically with teaching responsible choices and values [2].

### 6.1 Parenting Styles towards students’ career aspirations

According to the parental authority patterns conducted by Baumrind [3]; there are three styles which are authoritarian, authoritative and permissive. These three styles can be also seen consistently with the three dimensions of parents’ behaviors. In line with this idea, the authoritarian style is the combination of low involvement, high structure and low autonomy support which means high control. On the contrary, the

permissive style is combined with high involvement, low structure and high autonomy support and the authoritative style is the combination of low involvement, high structure and high control. In term of children who are brought up by authoritarian parents are less likely to engage in exploratory and challenge-seeking behaviors. Children whose parents are permissive usually are less persistent at learning tasks. Children reared under authoritative parenting are more exploratory, self-reliant, and achievement-oriented [6].

Past research has studied about the relationship between students’ goal orientations and their perception of parenting styles. The study of students’ goal orientations focuses on the types of learning goals students adopt in academic situations. The first goal has been labeled a mastery goal, learning goal or task involved. Students who are oriented toward mastery goals are interested in learning new skills and improving their understanding and competence. The second is a performance of ego involved. Students who orient towards performance goals are more concerned with proving their ability or avoiding negative judgments of their competence (as cited in [12]). Prior research has found that authoritative style was related to mastery orientation whereas authoritarian and permissive styles were related to performance orientation [11, 12]. The study conducted by Chan and Chan [6] found that for Hong Kong teacher education students, authoritativeness was significant and positively related to learning goals (mastery goals), where as authoritativeness and authoritarianism were significantly and positively related to performance goals. They also found that authoritativeness was more effective with females and authoritarianism worked better with males, in term of gender [6, 12].

Parents distinctly have a great impact on students’ performance, goal orientation and their career plan as well. Parents also believe that career planning is important at both the junior and senior high levels [2].

## 7 Conclusion

Students’ career aspirations in science, engineering and related fields have evolved steadily due to the problem of the reduction of students’ interest in science education. The issue of gender differences is also taken into account because prior research has reported that many of girls who do better than boys in high school science education will choose non-science careers. There is a multitude of factors influencing students’ career aspirations. Whilst the body of research conducted has mentioned about the problem of science and engineer workforce, it has difficult to say definitively about how to solve this problem. Studying the factors influencing students’ career aspirations might be useful for understanding the factors shaping

the career aspiration of students, actually family factors play a prominent role for the children as mentioned above. Previous research also suggested that home-school partnerships in career planning may be appropriate, where parents and teachers work together to increase communication about a child's career-related needs in order to better meet those needs. As well, schools may be encouraged to provide workshops for parents on how to access career-related information and resources [2]. Definitely, it is necessary to continue studying how parental factors can shape students' science career aspirations and how this factor can make the problem mentioned above to be remediated.

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