FACTORS INFLUENCING THE CHANGING OF SUBJECT SPECIALISATION BY STUDENTS AT TEACHER TRAINING INSTITUTIONS IN ESWATINI

Alfred F. Tsikati
University of Eswatini
fanaalfred@gmail.com

Abstract
In the academic year 2009/10 and 2010/11 at one teacher training institution in Eswatini, 55.1% of the student teachers changed the subject specialisation. Unfortunately, there is no study investigated factors influencing the change of subject specialisation by Primary Teacher Diploma (PTD) student teachers in Eswatini (Swaziland). Therefore, the purpose of the study was to identify factors influencing the change of subject specialisation by PTD students at teacher training institutions in Eswatini. The study was a descriptive survey research triangulating a desk review, modified Delphi technique and a survey questionnaire in data collection. The study was also a census of the 2012/2013 third year PTD students (N= 351) from three teacher training institutions. The instrument was validated by teacher educators involved in the programme who were part of the Delphi process. The instrument was found to be 83% reliable. The data were analysed using descriptive statistics, chi-square, correlation and binary logistic regression. The main findings of the study revealed that outside college experience and professionals were the main factors behind the changing of specialisation by student teachers at teacher training institutions in Eswatini. The study recommended that lecturers should be careful as they interact with the students since have an influence in the changing of the specialisation.

Keywords: *binary logistic regression, college major, subject specialisation; and teacher training institutions.*

INTRODUCTION

Background

Many students entering college do not persist in their first declared major through graduation (Sklar, 2014). Malgwi, Howe and Burnaby (2005) noted that most of the students enter college unsure which major to pursue; whereas others make an initial choice and later change it. Sklar (2014) revealed that in the United States of America, 46% of all first-time, full-time students entering four-year institutions in 2003 switched majors at least once before graduation. At times the number of students at higher education changing a subject specialisation would go up to 75%. Also, Chen (2013) observed that a relatively high rate of students is switching from STEM fields to non-STEM fields.

In Eswatini (Swaziland), the Guidelines and Regulations for Colleges Affiliated to the University of Eswatini (2002) indicate that there are three teacher training public institutions offering Primary Teachers' Diploma (PTD): Ngwane Teacher Training College, William Pitcher Teacher Training College and Nazarene Teacher Training College (currently known as Southern Africa Nazarene University). In these institutions student teachers choose a subject specialisation from four options: Applied Sciences; Languages; Pure Sciences and Social Studies. Students had to indicate the intended subject specialisation (pre-college specialisation) when applying for admission Ngwane Teacher Training College and William Pitcher College (WPC) while at Southern Africa Nazarene University the intended specialisation is done during the orientation. However, the students were only indicating their interested or intended area of specialisation when applying and the actual specialisation is chosen later: either at the end of the second year or just before the commencement of the third year in these teacher training institutions (Passaic, Ben bow & Simelane, 1990; Magagula & Manyatsi, 2004).

Several studies conducted are on factors affecting the choice of a specialisation (Dlamini, 1993; Dube & Habedi, 1989; Tsikati, 2018; Tsikati, Dlamini & Masuku, 2016) and none of these studies was on factors influencing the changing of subject specialisation by Primary Teacher Diploma student teachers. Yet, not only is it important to understand the reasons why students select particular majors but also why they switch majors. According to Dr. Philemon Gumedze - the Vice Principal (now Principal) at William Pitcher College during a personal communication on the 20th September 2011, most student teachers were constantly requesting to make changes after choosing the area specialisation. In the academic year 2009/10 at William Pitcher College, about 62.5% of the student teachers changed the subject specialisation while in the following academic year (2010/11), 47.6% changed the pre-college subject specialisation (William Pitcher College, 2012). Based on these high figures for changing specialisation, there was a need to investigate the factors influencing the changing of chosen subject specialisation by PTD student teachers at the teacher training institutions in Eswatini.

Purpose and objectives of the study

The purpose of the study was to identify factors influencing the changing of subject specialisation by PTD students at teacher training institutions in Eswatini. The specific objectives of the study were to:

1. Describe the association between pre-college and college subject specialisation at teacher training institution in Eswatini
2. Identify the reasons for changing college specialisation at teacher training institution in Eswatini
3. Identify the predictor and explanatory factors for changing subject specialisation at teacher training institution in Eswatini

Hypotheses of the study

Research hypothesis

Student's interest is the main factor in changing a subject specialisation by the Primary Teacher Diploma student teachers in Eswatini.

Alternative (plausible or rival) hypothesis

The changing of a subject specialisation by student teachers enrolled for Primary Teachers' Diploma in Eswatini is based on: high school student's grades, related exposure, nature of specialisation, professionals, significant others, attitude and impressions; and background and demographic characteristics.

Literature review

Several reasons exist in the literature for the changing of a subject specialisation or college major by students. Student interest (Malgwi, et al., 2005; Rababah, 2016; Strasser, Ozgu & Schroeder, 2002; Sutphin and Newsom-Stewart, 1995; Tsikati, 2018; Tsikati, Dlamini & Masuku, 2016); student confidence (Larson, Wu, Bailey, Borgen & Gasser, 2010); personality (Bauer & Dahlquist, 1999; Didia & Hasnat, 1998; Worthington & Higgs, 2004); career opportunity (Rababah, 2016); personal believes (Akintade, 2012; Mndebele & Dlamini, 1999); attitude and impression (Tsikati, 2018; Tsikati, et al., 2016) student grade (Geiger & Ogilby, 2000) were among the intrinsic factors (Dlamini, 1993) influencing the change of a college major or subject specialisation.

Extrinsic factors influencing the change of subject specialisation can be viewed as professionals (Dlamini, 1993; Dlamini, 2005; Dube & Habedi, 1989), significant others (Wildman & Torres, 2001), environmental related (Tsikati, 2014), and demographic and background related factors (Tsikati, 2014). The professionals influencing the change of subject specialisation were course instructors (Mauldin, Crain and Mounce, 2000; Malgwi, et al., 2005; Wilhelm, 2004); university or faculty member (Rababah, 2016); teachers (Jackman & Smith-Attisano, 1992); and career and guidance counsellors (Jackman & Smith-Attisano, 1992). Contrary, Cohen and Hanno (1993) and Dlamini (1983) reported that professionals such as college instructors and high school teachers and career and guidance counsellors did not influence students' choice of a programme (specialisation). The significant others influencing students were family members (Hanson, 1994; Rababah, 2016) and peers (Hanson, 1994; Rababah, 2016). The demographic and background variable included family background (Rababah, 2016); gender (Rababah, 2016); sex (Bathemi 2010; Malgwi et al., 2005) race (Leppel, Williams & Wauldauer, 2001); parental occupation (Leppel, et al., 2001) and socio-economic status (Leppel, et al., 2001). Lastly the environmental related factors were mass media (Rababah, 2016); job prospective / availability of jobs (Rababah, 2016); college experience (Mauldin et al., 2000); related exposure (Donnermeyer & Kreps, 1994; Mauldin et al., 2000; Sutphin & Newsom-Stewart, 1995; Wildman & Torres, 2001); nature of subject specialisation (Tsikati, 2018).

Bauer, Thomas and Sim (2017) categorized the factors for making a career change into social and personal factors. Social factors for a change of a specialisation were economy and job satisfaction. Anthony and Ord (2008) observed that having limited options on the initial career was another social factor for changing a career change. Whannel and Allen (2014) reported that perceived benefits in the specialisation such as financial security after having experienced short term employment contracts was influential in changing the decision on the specialisation. Personal factors for career change include having self-ability (Watt & Richardson, 2007), desire to make contribution

in the intended major or to be a change agent (Hunter-Johnson, 2015; Wake, 2015), related exposure (Anthony & Ord, 2008) such as teaching practice; personal fulfilment (Raggi & Troma, 2008); and personal growth and development (Williams, 2013). Another personal factor forwarded by career changers was desire to have a balance between family and work time (Whannel & Allen, 2014). Bauer, et al. (2017) found that job security, balanced family and work time, passion for teaching was the main personal factor for changing career. Also, being unhappy and having limited future options in the former specialisation led to a career change (Bauer, et al., 2017).

On the other hand, Seumola and Seymour (2015) found that students were changing a college major for the following reasons: previously lack of information on the new major and misperception on the major selected later. In addition, Seumola and Seymour (2015) presented the following as other factors prompting students to change a subject specialisation: loss of passion for previous major; difficulty with previous major; enjoyment of introductory course of the new major, new major being an alternate option; self-efficacy leading to improve academic performance; perceived value of the new major and recruiters' influence.

Conceptual framework

The study was framed by the College Major Satisfaction Model developed by Milsom and Coughlin (2015). The college major satisfaction model (Figure 1) illustrates the way specific kinds of opportunities lead to self and career awareness. The model demonstrates that students seek opportunities to acquire information such that they engaged in ongoing cycles of embracing or seeking specific chances to increase self or career awareness. Then, they subsequently reflect on the knowledge they acquired through pursuit of opportunities.

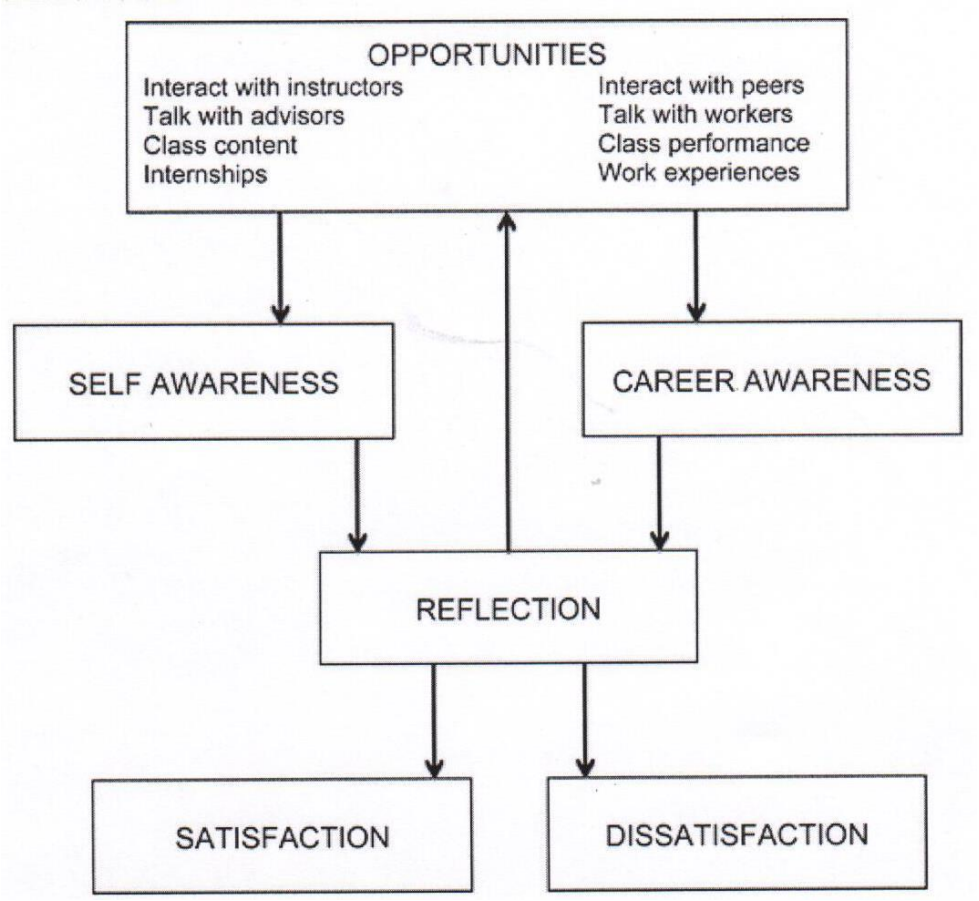

Figure 1. College Major Satisfaction Model developed by Milsom and Coughlin (2015)

The student glean insight through interactions with instructors, peers, advisors, and people employed in the workforce as well as activities such as completing assignments, attending class, and engaging in internship and other work experiences. The student self-awareness component of the model encompasses the interests, abilities, and values. On the other hand, the career awareness entails occupational information from class content, internships, interaction with people in the workforce (such as teachers) and professionals and significant others. The self-awareness and career awareness result in students' reflections which definitely reveal whether the student is satisfied or dissatisfied with the initial major. If the student is satisfied the initial college major is retained but if the student is dissatisfied the initial college major is changed and new major is chosen.

Methodology

The study was a descriptive survey research. A triangulation of desk review, modified Delphi technique and a survey questionnaire were used for data collection. The outcome from the desk review and modified Delphi technique were used to develop the survey questionnaire.

The target population was a census of the 2012/2013 final (third) year PTD students (N= 351) from Ngwane Teacher Training College; Southern Africa Nazarene University (previously known as Nazarene Teacher Training College) and William Pitcher Training College. An up-to-date population frame was obtained from the administrative offices of the three teacher training institutions to control frame error. Selection error was controlled by thoroughly checking of the register of students to avoid duplication of names. The instrument was validated by educators involved in the teaching of the PTD who were used during the Delphi process. The overall reliability coefficient of the study was found to be .83 which effectively means the instrument was 83% reliable. Self-administered questionnaires were used to collect data. Non-response error was controlled by comparing the means of early and late respondents (Miller and Smith, 1983). The data were analysed using descriptive statistics (such as means, standard deviations, frequencies and percentages), binary logistic regression, correlation and chi-square.

The model used in predicting the change of pre-college subject specialisation by PTD student teachers in Eswatini is indicated below:

$In[p/(1-p)] = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_k X_k$

Where: $\ln[p/(1-p)]$ = is the log odds ratio, or "logit" for choosing pre-college specialisation

$p/(1-p)$ = is the "odds ratio" for choosing a pre-college specialisation

p = probability that the event Y occurs, $p(Y=1)$

α = Y intercept (constant) – estimate of value Y when each independent variable is zero

β_k = regression coefficient (slope) for each predictor,

X_1 = outside college experience

X_2= influence by professionals

X_3 = years spent between completing high school and enrolling in college

Results and discussion

Consistency between pre-college and college subject specialisation

A Chi-square test was conducted to determine an association between pre-college specialisation and the college specialisation (see Table 1). Association was established between pre-

college specialisation and college specialisation (chi-square = 420.79, p<.01). Thus the null hypothesis was rejected; there was significant association between the choice of subject specialisation pre-college and in the college. Cramer V was used to determine the strength of relationship (association) between the pre-college specialisation and college specialisation. The test indicated that the relationship is statistically significant (Cramer V = .63, p<.01). The correlation value was r_v=.63 indicating a positive substantial relationship (Davis, 1970). Thus, the student teachers were likely to maintain the pre-college specialisation once at the college.

Table 1. *Consistency between pre-college and college subject specialisation*

Statistics	**Value**	***df***	***p***
Chi-square	420.79	9	.00
Cramer V	.63	-	.00

Reasons for changing specialisation

Among those respondents changing pre-college specialisation, 68 student teachers (73.1%) of the 93 respondents provided the reasons for changing the pre-college subject specialisation while 26.9% (n=25) did not state the reasons for changing the pre-college specialisation. A total of 13 commonalities (items) were developed from the 78 reasons provided by the respondents (see Table 2). Tally marks, frequencies and percentages were then used to indicate the number of times each item appeared. About a quarter of the student teachers (23.1%) changed the pre-college subject specialisation because of Year 1 and Year 2 overall grades / scores. The influence of grade on changing specialisation was also reported by Whiteley and Porter (2000); Dlamini (1983) and Dlamini (2005).

About 18% of the respondents changed the pre-college subject specialisation because of limited space in Applied Sciences and Pure Sciences. This finding confirms those by Hadebe (2010) that some student will change if the space in the intended specialisation is limited. Also about 15% of the respondents changed pre-college specialisation because of the subject combination. The combination of subjects seemed to be either promoting or hindering the choice of a subject specialisation. Affirmatively, Dlamini (2005) found that the combination of courses making programme influenced the students' choice to a specialisation. Also, 15% changed specialisation because of interest. People are naturally dynamic, so is interest. Sutphin and Newsom-Stewart (1995) that interest influence student to change a college major.

Table 2. Reasons for changing specialisation

Reasons for changing specialisation	**Tally marks**	**f**	**%**
Year one and year two overall grade / score	~~////~~ ~~////~~ ~~////~~ ///	18	23.1
Limited space in the specialisation due to facilities	~~////~~ ~~////~~ ////	14	17.9
Subject combination e.g. Agriculture & Consumer Sciences	~~////~~ ~~////~~ //	12	15.4
Change of interest from pre-college specialisation	~~////~~ ~~////~~ //	12	15.4
Pre-college specialisation becoming difficult	////	4	5.1
Opportunities for immediate employment, promotion and further training	////	4	5.1
Motivated by the lecturers	///	3	3.8
Attitude from lecturers towards the student teachers and specialisation	///	3	3.8

College experience (enjoyment during year one, year two and teaching practice)	///	3	3.8
Undecided because teaching is a fall back from my career	//	2	2.6
Self-employment opportunities	/	1	1.3
Lectures commitment towards attending classes and marking (assignment, tests and exams)	/	1	1.3
Role models	/	1	1.3
Total		78	100

Predictors and explanatory factors for changing subject specialisation

Binary logistic regression was used to determine the predictors and explanatory variables for changing the pre-college specialisation in the three colleges offering PTD programmes in Eswatini. The dependent variable which measured if student teachers changed pre-college subject specialisation was coded 'yes'. 'Yes' was equal to 1 if the respondent changed specialisation and 'no' was equal to 0 if student teachers did not change. A logistic model is said to provide a better fit to the data if it demonstrates an improvement over the intercept – only model (also called null model). Likelihood ratio test (Chi-square statistic), Pseudo R-square (R^2), and the Hosmer-Lemeshow goodness-of-fit test were used to assess a better model (see Table 3). The Likelihood ratio test (Chi-square statistic) depicted that the model was significant (Chi-square = 31.59, $p \leq .01$) in distinguishing between factors for changing a subject specialisation by PTD student teachers. Similarly, the Hosmer-Lemeshow (H-L) goodness of-fit test also confirmed that the model was acceptable (Chi-square = 10.76, $p > .05$). Lastly, Nagelkerke R^2 value of .12 indicated that the model could account for only 12% of the variance between prediction and groupings.

Table 3. Evaluation of goodness model fit

Test	X^2	*df*	*p*
Likelihood ratio test (Overall model)	31.59	16	.01
HL Goodness of fit test	10.76	8	.22

Negelkerke $R^2 = .12$

Table 4 presents the use of the Wald test to evaluate whether or not the independent variables were statistically significant in differentiating between the two groups in the binary logistic comparisons. The Wald criterion demonstrated that outside college experience (Wald = 5.62, $p \leq .01$); and professionals (Wald = 3.83, $p \leq .05$) were the independent variables that were significant in distinguishing between changing a subject specialisation. The Exponential Beta value indicated that student teachers who were exposed to a specialisation outside the college such as having active membership in clubs or organization were more likely to change subject specialisation rather than student teachers who had less outside college exposure. The value further showed that when outside college experience was raised by one unit, the odds

Table 4. *Predictors and explanatory factors for changing subject specialisation*

Variables	**B**	**S.E.**	**Wald**	**p**	**Exp(B)**
Constant	-.61	1.75	.12	.72	.54
Interest in the specialisation	.23	.18	1.65	.19	1.26
College student grades	-.09	.14	.38	.53	1.21

Outside college experience	.39	.16	5.62	.01*	1.48
College experience	-.14	.19	.57	.45	.86
Image of the department	-01	.18	.01	.97	.99
Nature of specialisation	.03	.21	.02	.87	1.03
Influence from professionals	-.28	.14	3.83	.05*	.74
Influence from significant others	-.03	.13	.05	.81	.96
Attitude and impression	.03	.11	2.70	.10	1.03
Years spent between Grade 12 and entry into college	-.17	.06	7.67	.00*	.84
Sex	.33	.27	1.52	.21	1.40
Age	.05	.05	.98	.32	1.06
Marital status	.16	.37	.19	.65	1.18
Home location	.09	.33	.07	.79	1.09
Short-term teaching contract	-.16	.36	.20	.65	.84
Subject combination	-.44	.27	2.70	.10	.64

*$p \leq .05$

ratio would be multiplied by 1.48. It implies that an increase by each level of influence (e.g. from slightly high level of influence to highest level of influence) of outside college experience the chances of changing a specialisation increased by 48% (1.48 - 1 = 0.48). Donnermeyer and Kreps (1994); Sutphin and Newsom-Stewart (1995) and Wildman and Torres (2001) confirmed the findings on the influence of outside college experience. Wildman and Torres indicated that prior exposure in agriculture (such as experience, agriculture work, radio broadcast, television programmes and literature) would attract college students towards agriculture.

The Exponential Beta value also indicated that student teachers were influenced by professionals (such as role models, lecturers, career guidance counsellors, and college administration to name a few) to change a subject specialisation. Student teachers who received less advice from professionals were less likely to change subject specialisation compared to student teachers who constantly received advice from the professionals. The value further showed that when advice from professionals was raised by one unit the odds ratio declined by .74. It could be implied that an increase by each level of advice by professionals; the probability of maintaining the subject specialisation decreased by 26% (0.74 - 1 = -0.26). The influence of professionals on the choice of subject specialisation was also reported by Dlamini (1993); Dlamini (1983); Dlamini (2005); and Dube and Habedi (1989).

Also, the hypothesis that interest is the main factor in changing a subject specialisation by the PTD student teachers in Eswatini was rejected. Thus, interest is the main factor in changing a subject specialisation by the PTD student teachers in Eswatini

Conclusion and recommendations

Conclusions

Outside college experience (related exposure) and professionals were explanatory and predictor variables for student to change a subject specialisation. Also, college grade, availability of space on the intended specialisation, subject combination and student interest were the reasons for student to change a subject specialisation. The findings of the study provide support for using the College Major Satisfaction Model developed by Milsom and Coughlin (2015) in explaining reasons student teacher change a subject specialisation at teacher training institutions in Eswatini.

Recommendations

The teacher training institutions need to increase the number or sizes of teaching and learning equipment and facilities so that the student interested in each specialisation is increased. Lastly, the subject combination at the teacher training needs to be revised to cater for the student interest and abilities but should remain relevant and workable.

References

Akintade, B. O. (2012). Considering the determinants of selecting geography as a discipline: The case of senior secondary school students in Ilorin, Nigeria. *Ozean Journal of Social Sciences 5*(1). Retrieved from http://ozelacademy.com.

Anthony, G. & Ord, K. (2008). Change of career secondary teachers: Motivations, expectations and intentions. *Asia Pacific Journal of Teacher Education, 36*(4), 359-376. Retrieved from http://dx.doi.org/10.1080/13598660802395865.

Bauer, C., Thomas, S. & Sim, C. (2017). Mature age professionals: Factors influencing their decision to make a career change into teaching. *Issues in Educational Research, 27*(2) 185-197.

Bathemi, M. (2010). *Factors influencing student's choice of Home Economics subject in north east senior secondary schools in Botswana.* Unpublished bachelor's thesis, University of Swaziland, Luyengo, Swaziland.

Bauer, R. J., & Dahlquist, J. R. (1999). Recognizing and Eliminating Gender Bias in Finance Education. *Financial Practice and Education, 9*(1), 83-91

Chen, X. (2013). *STEM Attrition: college students' paths into and out of STEM fields* (NCES 2014-001). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.

Cohen, J. & Hanno, D. (1993). An analysis of underlying constructs affecting the choice of accounting as a major. *Issues in Accounting Education, 8*(2), 219-238.

Didia, D., & Hasnat, B. (1998). The determinants of performance in the university introductory finance course. *Financial Practice and Education, 8*(1), 102-107.

Dlamini, B. M. (1983). *Factors influencing high school graduates in Swaziland to become agriculture and home economics teachers.* University of Swaziland. Luyengo Swaziland.

Dlamini, M. P. (1993). Predictors of college students' reasons for pursuing programme of study and enrolling in tertiary institutions in Swaziland. *UNISWA Journal of Agriculture, 2,* 64-69.

Dlamini, S. (2005*). Factors influencing student's selection of an option in the Faculty of Agriculture, University of Swaziland.* Unpublished bachelor's thesis, University of Swaziland, Luyengo, Swaziland.

Donnermeyer, J. F., & Kreps G.M. (1994). Assessing college of Agriculture freshmen. *NACTA Journal, 38(*1), 45-48.

Dube, M. A., & Habedi M. K. (1989). *Factors influencing students to enrol in the faculty of Agriculture in the University of Swaziland*. Published Research Project.

Geiger, M. A., & Ogilby, S. M. (2000). The first course in accounting: student's perceptions and their effect on the decision to major in accounting. *Journal of Accounting Education, 18,* 63-78. http://dx.doi.org/10.1016/S0748-5751(00)00011-7

Hanson, S. L. (1994). Lost Talent: unrealized educational aspirations and expectations among US Youths. *Sociology of Education, 67,* 159-183. http://dx.doi.org/10.2307/2112789

Hunter-Johnson, Y. (2015). Demystifying the mystery of second career teachers' motivation to teach. *The Qualitative Report, 20*(8), 1359-1370.

Jackman, W.J., & Smith-Attisano, R. A. (1992). Qualitative and quantitative methods add depth to recruiting study. *NACTA Journal, 3 (*1), 46-50.

Larson, L. M., Wu, T., Bailey, D. C., Borgen, F. H., & Gasser, C. E. (2010). Male and female college students' college majors: The contribution of basic vocational confidence and interests. *Journal of Career Assessment, 18,* 16–33. doi:10.1016/j.jvb.2009.10.007

Leppel, K., Williams, M. L., & Waldauer, C. (2001). The impact of parental occupation and socioeconomic status on choice of college major. *Journal of Family and Economic issues, 22,* 373-394. http://dx.doi.org/10.1023/A:1012716828901

Malgwi, C. A., Howe, M. A. & Burnaby, P. A. (2005). Influences on students' choice of college major. *Journal of Education for Business, 80*(5), 275-282.

Mauldin, S., Crain, J. & Mounce, P. (2000). The accounting principles instructor's influence on student's decision to major in accounting. *Journal of Education for Business,* 75, 142-148.

Miller, L. E., & Smith (1983). Handling nonresponse issues. *Journal of Extension, 21(5), 45-50.* Retrieved from http://www.ijese.com/.

Milsom, A. & Coughlin, J. (2015). Satisfaction with College Major: A Grounded Theory Study. *NACADA Journal, 35*(2), 5-14. [doi:10.12930/NACADA-14-026]

Mndebele, C. B. S., & Dlamini, Z. C. (1999). Parent related problems associated with Home based vocational Agriculture projects: the case of Swaziland. *Journal of International Agricultural and Extension Education, 6(1), 37-44.*

Rababah, A. (2016). Factors influencing the students' choice of Accounting as a major: The Case of X University in United Arab Emirates. *International Business Research, 9,* (10), 25-32

Raggi, A. & Troman, G. (2008). Turning to teaching: Gender and career choice. British *Journal of Sociology of Education, 29*(6), 581-595.

Seumola, T.& Seymour, L. F. (2015). Factors affecting students changing their major to information systems. *SACLA,* 27-35. Retrieved from https://www.researchgate.net/publication/308787017

Sklar, J. (2014). *The impact of change of major on time to bachelor's degree completion with special emphasis on STEM Disciplines: A Multilevel Discrete-Time Hazard Modeling Approach.* California Polytechnic State University. Retrieved from https://doi.org/10.3200/JOEB.80.5.275-282

Sutphin, M. & Newsom-Stewart, H. D. (1995). Student's rationale for selection of an Agricultural related courses in the high school by gender. *Journal of Agricultural Education,* 36 (2), 55-61.

Strasser, S., Ozgur, C. & Schroeder, D. (2002). Selecting a business college major: An analysis of criteria and choice using hierarchy process. *Mid-American Journal of Business, 17*, 46-57.

Tsikati, A. (2014). *Factors influencing the choice of subject specialisation by teacher training college students in Swaziland.* Unpublished master's thesis, University of Swaziland, Luyengo, Swaziland.

Tsikati, A. (2018). Factors influencing the choice of subject specialisation by students at teacher training institutions in Eswatini. *Proceedings of the 17th BOLESWANA Biennial Research Symposium, 293 – 295.* University of Namibia, Komasdal Campus, Windhoek, Namibia.

Tsikati, A., Dlamini B. M. & Masuku, M. (2016). Factors influencing the choice of an agriculture specialisation by college student teachers in Swaziland. *Journal of Agricultural Studies,* 4(1), 12-24

University of Swaziland (2002). *Guidelines and regulations for colleges affiliated to the University of Swaziland.* Kwaluseni, Swaziland: Author.

Watt, H. & Richardson, P. (2007). Motivational factors influencing teaching as a career choice: development a validation of the FIT-choice scale. *Journal of Experimental Education,* 75(3), 167-202. http://dx.doi.org/10.32000/JEXE.75.3.167-202.

Whannel, R. & Allen, W. (2014). The motivation and identity challenges for PhD holders in the transition to science and mathematics teaching in secondary education: A pilot study. *Australian Journal of Education,* 39(12). Retrieved from http://dx.doi.org/1014221/ajte.2014v39n12.6

Whitely, S., & Porter, J. (2000). *Student perceptions on subject selection, longitudinal perspectives from Queensland school.* Retrieved from: http://www.aare.edu.au/98262html.

Wildman, M., & Torres, R. (2001). Factors identified when selecting a major in agriculture. *Journal of Agricultural Education, 42(*2), 46-56.

Wilhelm, W. B. (2004). The relative influence of published teaching evaluations and other instructor attributes on course choice. *Journal of Marketing Education, 26*(1), 17-30.

Williams, J. (2013). *Constructing new professional identities: Career changers in teacher education.* Rotterdam: Sense Publication.

Worthington, A., & Higgs, H. (2004). Factors explaining the choice of an economics major: The role of student characteristics, personality and perceptions of the profession. *International Journal of Social Economics, 31*(5/6), 593-613. http://dx.doi.org/10.1108/03068290410529416