International Journal of Agricultural Management and Development
Available online on: www.ijamad.iaurasht.ac.ir
ISSN: 2159-5852 (Print)
ISSN:2159-5860 (Online)
Research Paper

How Students' Views on Educational Factors Influence Their Achievement Motivation and Learning Approaches? Comparison of Perspectives

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Received: 18 October 2017,
Accepted: 13 October 2018

Abstract

This comparative study was conducted to explore achievement motivation and learning approaches of agricultural students and to examine students' views on educational factors influencing their achievement motivation and learning approaches. The statistical population of this study comprised agricultural students of Tehran University (Tehran, Iran) and Ghent University (Belgium). A sample of 89 agricultural students from Tehran University and 85 agricultural students from Ghent University participated in this study, using the random sampling method. A questionnaire was used to obtain data on respondents' demographic characteristics, viewpoints on educational factors, achievement motivation, and learning approaches of respondents. Validity and reliability coefficient of the instrument were determined through opinions of professors and application of coefficient alpha (more than 0.8 for different parts). Based on the results, there was no significant difference between the two groups (Iranian and Flemish students) on intrinsic motivation, while the two groups showed significant difference on extrinsic motivation. There were, also, differences between the two groups of students regarding deep approach to learning. This study implied that both similarities and differences can be observed on the factors influencing achievement motivation and learning approaches of agricultural students in different learning contexts. Based on the findings, conclusions were drawn and recommendations were put forth.

Keywords:
achievement motivation; agricultural student; comparative study; learning approaches

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INTRODUCTION

Learning outcomes of students is one of the most important pieces of information utilized by employers in decision making as a signal of individuals' capability (Barkley & Forst, 2004). In order to improve the quality of students' learning, it is important to understand the learning process and learning outcomes of students (Beyaztaş & Senemoğlu, 2015; Bonsaksen et al., 2017). Research has shown that learning approaches contributes to learning outcomes and performance (Bonsaksen et al., 2017; Watkins, 2001; Zeegers, 2001). In general, two approaches to learning can be identified, the deep approaches and the surface approaches (Hussin et al., 2017). The deep approach, defined with a combination of intention and processes, emphasizes understanding the learning process (Entwisle & McCune, 2004; cited in Cetin, 2016). On the contrary, the surface approach is related to the intention of finishing a task without putting much effort in it (Cetin, 2016).

Among factors affecting students' learning, motivation is known as a significant reason for learning outcomes (Choosri & Intharaksa, 2011). Motivation can influence what, when, and how students learn (Pintrich & Schunk, 2002). Accordingly, students need to be motivated to use learning approaches to manage their cognition and effort (Zhu et al., 2009). Generally, the more a student is motivated to do an assignment, the more deeply he/she learns, and the better his/her performance on assignment tasks (Ross, 2008). Motivation can take either intrinsic or extrinsic forms. Intrinsic motivation refers to doing an activity for one's own purpose. The activity itself is interesting and engaging and is not a means to incentive or encouragement (Isen & Reeve, 2005). Students who are intrinsically motivated show self-determination behaviors (Rienties et al., 2012). Extrinsic motivation refers to behaviors that are engaged in response to something apart from its own benefit, such as reward or the command of other people (Lee et al., 2005). Students who adopt external goals are worried about receiving higher grades compared to those who adopt internal and learning-focused goals (Harackiewicz et al., 2002). Ligon (2006) and Cokley et al. (2001) studies indicated that achievement motivation across gender was not significant. However, Linnenbrink and Pintrich (2002) and Wigfield and Eccles (2002) reported that constructs related to achievement motivation differ significantly between males and females. Intrinsic motivation is assumed the desired type of motivation in students (Deci & Ryan, 2000), and it has been shown to be associated with deep learning and better performance (Deci & Ryan, 2000) in comparison to extrinsic motivation.

Researches have shown that a variety of factors have impact on students' motivation and learning. Oche (2012) stated that the way a teacher presents subject matter to students might make them like or dislike the subject. William (2007) and Kehm (2010) suggested motivated teachers as effective factors on students' achievement motivation. Content (Williams & Williams, 2011), classroom environment (Ranka, 2016), teacher-student interaction (Nugent, 2009), and peers (WigWeld & Tonks, 2002) were the other educational factors that have impacts on students' motivation. According to Rahman et al. (2012), major factors affecting the students' learning approaches is good teaching, assessment, learning resources, and clear objectives. Lublin (2003) stated that assessment of the subject was the major factor that influences their preferred approaches.

On the other hand, agriculture plays a significant role on development and economic growth. As agriculture is based on the modern science and technologies, demand for qualified and eligible work-forces is growing in the sector (Okutsu et al. 2004). Therefore, agricultural education is critical in improving the people's capacity (Movahedi, 2014) and the prosperity of agricultural development (Manafi et al., 2016; Mulder & Kupper, 2006). While higher education is the main focus of economic, political, social and cultural devel-

opment of each country, it should be studied from various aspects in order to achieve the intended goals (Khajeshahkoohi and Sahne, 2009; cited in Movahedi, 2014). Students are known as one of the most important inputs that need proper attention. Given the aforementioned issues and due to the contribution of achievement motivation and learning approaches to learning outcomes (BouJaoude et al., 2004; Collins et al., 2004), this study aims to investigate students' achievement motivation and learning approaches as well as to find the effects of educational factors on the studies variables. Theoretical framework of the study is shown in Figure 1.

Specific objectives of the research were to study: (1) Demographic characteristics of the sampled population (2) students' achievement motivation and learning approaches (3) students' views regarding the educational factors (4) the relationship between educational factors and students' achievement motivation and learning approaches.

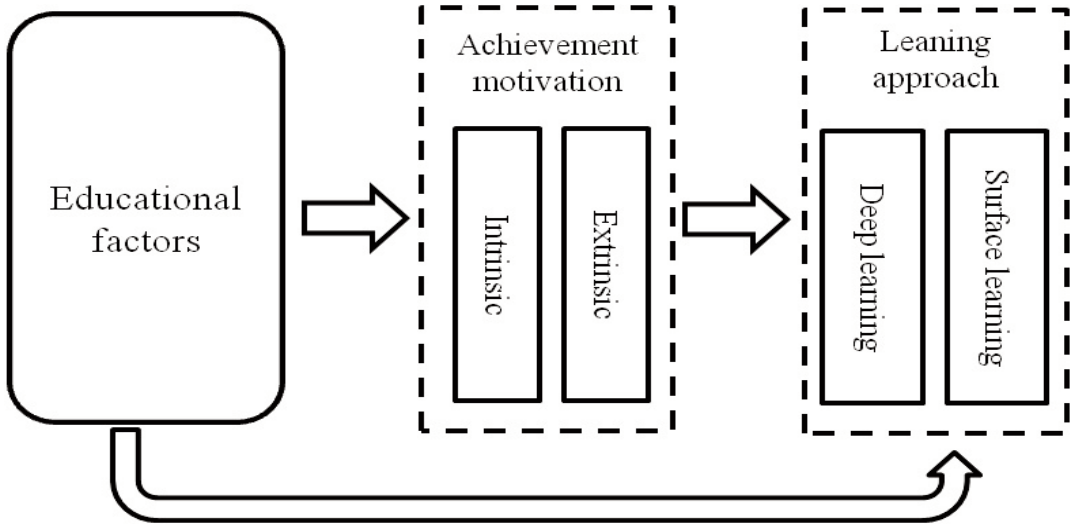

Figure 1. Theoretical framework of the study

METHODOLOGY

This comparative study is rooted in applied studies and was conducted based on the survey method in descriptive statistics. The statistical population of this study consisted of agricultural students of Tehran University (Iran) and Ghent University (Belgium). Two views about student acceptance for higher education include free access and limited access to higher education (Hedjazi, 2006). The Iranian and Flemish (Belgium) learning contexts show differences. For Iranian students entering to universities is competitive, and it is important and necessary to pass the national entrance exam for university access. The acceptance of a student in each field is based on his/her entrance examination scores, the number of students that can be accepted in that field, and the competitive results among the students who applied in each field. In contrast, Flemish students are free to choose most of the study programs. Accordingly, they have easier access to university; however, after entering the university, the evaluation practices force students to be constantly busy with their study (Zhu, 2009). Flemish system follows the European Bologna guidelines and takes three years at bachelor level (Zhu, 2009), while bachelor level in Iran takes four academic years. By use of Cochran formula, a sample of 89 students from the University of Tehran and 85 stu-

dents from the University of Ghent randomly selected randomly and participated in this study.

A questionnaire was developed to collect data from agricultural students. The instrument was divided into three parts: Part one assessed students' achievement motivation and learning approaches. The scale of achievement motivation was composed of two subscales (intrinsic and extrinsic motivation), each of subscales had four items (Pintrich et al., 1991; cited in Pintrich, 2003). R-SPQ-2F, a revised version of Study Process Questionnaire, was used for assessing students' learning approaches (Biggs et al., 2001). The scale was composed of two subscales (deep and surface learning), each of subscales had 10 items. Part two consisted of 22 items to assess the viewpoints of students on educational factors, using five-point Likert scales ranging from strongly disagree (1) to strongly agree (5). Finally, the third section would collect demographic data, interest in the field of agriculture and so forth. Achieving equivalence between the source version and the target version of an instrument is important in translation and includes not only lingual, but also cultural considerations (Su & Parham, 2002). For Iranian students, the standardized scales were translated into Persian and the translation was validated according to the cultural and educational contexts. For the Flemish students, Dutch version of the research instrument was used. The demographic and educational items were translated to English, and were checked for suitable corresponding terms according to the cultural setting. Then, the questions were translated into Dutch by two bilingual experts of English–Dutch. Face validity of the instrument was determined through opinions of professors at University of Tehran. Reliability, an internal consistency measure, was confirmed by application of coefficient alpha. Coefficient alpha estimates both the degree of interrelatedness and variance among a set of items. The reliability of the instrument for different scales for both the Iranian and the Flemish groups was found to be acceptable (George & Mallery, 2003) (Table 1).

Table 1
Coefficient Alpha for the Research Scales

Scales		Coefficient alpha	
		Iranian	Flemish
Achievement motivation	Intrinsic motivation	0.84	0.87
	Extrinsic motivation	0.88	0.92
Learning approaches	Deep learning	0.89	0.85
	Surface learning	0.91	0.81
Educational factors		0.83	0.77

Using SPSS version 16, descriptive and inferential statistics were calculated for data analysis. The descriptive statistics included frequencies, percentages, mean, and standard deviation; while inferential statistics included comparative tests, factor analysis and path analysis based on a series of regressions.

RESULTS

The profile of students participated in this study showed that 52.8% of Iranian students and 56.5% of Flemish students were females. Iranian students were, on average, 21 years old and Flemish students were, on average, 20 years old. In both groups, the majority of the respondents had not any previous expe-

riences in agriculture (before entering the field of study). Comparisons of the two groups (Iranian and Flemish students) on demographic information indicated no significant differences between the groups on the basis of gender. There were also non-significant differences between the two groups on the basis of previous experience in agriculture, employment status of father and mother (agriculture related jobs or not), information about employment possibilities of the agricultural sector, and whether they have ever decided to change field of study to non-agriculture majors. There were significant differences between the groups (Iranian and Flemish students) on the basis of age and place of birth (80.9% of Iranian students versus 51.8% of Flemish students were city in origin). The profiles of the two groups of respondents are presented in Table 2.

Table 2
Profile of Respondents

Variable	Iranian		Flemish		t-test/ Mann-Whitney U/ Chi-square	(*P*-value)
	Frequency	%	Frequency	%		
Gender					0.235^{ns}	(0.628)
Male	42	47.2	37	43.5		
Female	47	52.8	48	56.5		
Age (year)					2.877**	(0.005)
<20	32	36.0	38	44.7		
20-22	38	42.7	42	49.4		
23-25	14	15.7	5	5.9		
>25	5	5.6	-	-		
Place of origin					16.606**	(0.000)
City	72	80.9	44	51.8		
Village	17	19.1	41	48.2		
Previous experience in agriculture					1.552^{ns}	(0.213)
Yes	19	21.3	12	14.1		
No	70	78.7	73	85.9		
employment status of father and mother (at least one of those work in agricultural sector)					0.442^{ns}	(0.506)
Yes	17	19.1	13	15.3		
No	72	80.9	72	84.7		
Information about employment possibilities of agricultural sector					3540.00^{ns}	(0.444)
Very little	6	6.7	-	-		
Little	31	34.8	23	27.1		
Medium	23	25.8	39	45.8		
Much	20	22..6	21	24.7		
Very much	9	10.1	2	2.4		
Have ever decided to change field of study to non-agriculture majors					1.187^{ns}	(0.276)
Yes	32	36.0	24	28.2		
No	57	64.0	61	71.8		

** p<0.01, ^{ns} Non significant

In order to classify educational variables into a small number of factors that can sufficiently explain the relations among a set of variables, an exploratory factor analysis with data reduction approach was used. Items that are grouped together are assumed to measure the same underlying construct (Kerlinger, 1986; cited in Gholifar et al., 2010). The Kaiser-Meyer-Olkin (KMO) calculated and obtained 0.751. This indicated that the sample was adequate for factor analysis (Kaiser, 1974). Bartlett's Test of Sphericity turned out to be 1106.66 (p<0.01), showed that the data were appropriate for factor analysis.

The Kaiser criterion was utilized to arrive at a particular number of factors to extract and so, only factors with eigenvalues greater than 1 were kept. Accordingly, four factors with eigenvalues over one were extracted. Three items were omitted from the analysis because their factor loadings were lower than 0.5 and they were not related with other variables. The results of varimax rotation option, which tries to minimize the number of variables that load highly on a factor, are shown in Table 3. Factors were given a descriptive title that described the attributes of the items.

Table 3
Items Loaded in the Factors Using Varimax Rotated Factor Analysis

Name	Item	Factor loadings			
		Factor 1	Factor 2	Factor 3	Factor 4
University facilities and support (UF&S)	Quantity and quality of computer services	0.844			
	Quality and quantity of greenhouse and agricultural land	0.762			
	Students consultation about their future career in agriculture	0.801			
	Invitation of successful people in agriculture to have a lecture for students	0.772			
	Interaction between university with rural communities and agricultural farms	0.714			
Classroom climate (CC)	Good relationship between professors and students		0.688		
	Good relationships among students		0.570		
	Professors welcomes to students' ideas and viewpoints		0.732		
	Competitive climate in classrooms		0.720		
	Stress on real motivation instead of grades for learning (e.g. productivity and good jobs after graduation)		0.811		
Educational goals and contents (EG&C)	Awareness of the field of study goals			0.721	
	Relevance of course contents to students' level of information and knowledge			0.757	
	up-to-date course contents			0.709	
	Relevance of course contents to the needs in agricultural sector			0.640	
Teaching and assessment (T&A)	Students encouragement to do researches				0.698
	Multiple exams for assessing students' performance				0.745
	Master professors on the course contents				0.803
	Stating goals before teaching				0.599
	Students encouragement to participate in classroom discussions				0.734

Students' achievement motivation and learning approaches

There was no significant difference between the two groups (Iranian and Flemish) on the basis of intrinsic motivation, while there was significant difference between the two groups on extrinsic motivation (t=-1.977, *p*= 0.049). In both groups, there were no significant differences between males and females on intrinsic and extrinsic motivation.

There were significant differences between the two groups (Iranian and Flemish) on deep learning (t= 2.923, *p*= 0.004). In Iranian group, female students had significantly higher score on surface learning. Table 4 shows the detailed results.

Table 4
Results of T-Test for Assessing Iranian and Flemish Students' Achievement Motivation and Learning Approaches

Variable			Mean (SD)	t-Value (Sig.)	Male Mean (SD)	Female Mean (SD)	t-Value (Sig.)
Achievement motivation	Intrinsic motivation	Iranian	15.37 (2.24)	0.055^{ns} (0.956)	15.47 (2.13)	15.27 (2.35)	0.417^{ns} (0.678)
		Flemish	15.35 (1.99)		15.75 (1.73)	15.04 (2.13)	1.658^{ns} (0.101)
	Extrinsic motivation	Iranian	13.37 (2.41)	-1.977* (0.049)	12.95 (2.43)	13.63 (2.27)	-1.371^{ns} (0.174)
		Flemish	14.12 (3.04)		13.67 (3.14)	14.47 (2.94)	-1.210^{ns} (0.230)
Learning approach	Deep learning	Iranian	32.24 (4.87)	2.923** (0.004)	32.38 (4.96)	32.12 (4.83)	0.244^{ns} (0.808)
		Flemish	30.02 (5.16)		30.37 (5.55)	29.75 (4.87)	0.554^{ns} (0.581)
	Surface learning	Iranian	28.52 (6.23)	0.893^{ns} (0.373)	27.09 (6.17)	29.80 (6.06)	-2.088* (0.040)
		Flemish	27.80 (4.30)		26.83 (4.73)	28.54 (3.82)	-1.836^{ns} (0.070)

SD= Standard Deviation
^{ns}: Non significant
**: p<0.01, *: p<0.05

Students' views on educational factors

The results showed that Iranian students were significantly more satisfied with classroom climate compared to Flemish students (t= 2.097, *p*=.037), while Flemish students were significantly more satisfied with educational goals and contents compared to Iranian students (t= -2.395, *p*=.018). In both groups, there were no significant differences between males and females' views on university facilities and support, educational goals and contents, and teaching and assessment. The detailed results are reported in Table 5.

Path analysis

In order to estimate the effect size of educational factors on students' achievement motivation and learning approaches, path analysis was conducted. In the Iranian context, university facilities and support had the most effect on extrinsic motivation and educational goals and contents had the most

Table 5
Result of t-test for Assessing Iranian and Flemish Students' Views on Educational Factors

Variable	Label		Mean (SD)	t-Value (Sig.)	Male Mean (SD)	Female Mean (SD)	t-Value (Sig.)
University facilities and support	UF&S	Iranian	16.30 (2.74)	-1.438^{ns} (0.152)	16.76 (2.15)	15.88 (3.14)	1.519^{ns} (0.132)
		Flemish	16.91 (2.93)		16.78 (3.02)	17.02 (2.89)	-.367^{ns} (0.715)
Classroom climate	CC	Iranian	19.06 (3.28)	2.097* (0.037)	19.92 (3.29)	18.29 (3.11)	2.400* (0.019)
		Flemish	18.16 (2.27)		18.00 (2.19)	18.29 (2.35)	-.583^{ns} (0.561)
Educational goals and contents	EG&C	Iranian	14.85 (2.86)	-2.395* (0.018)	15.40 (2.32)	14.36 (3.21)	1.736^{ns} (0.086)
		Flemish	15.71 (1.72)		15.64 (1.58)	15.77 (1.84)	-.321^{ns} (0.749)
Teaching and assessment	T&A	Iranian	17.73 (2.91)	.110^{ns} (0.913)	17.54 (2.32)	17.89 (3.36)	-.558^{ns} (0.579)
		Flemish	17.68 (2.86)		17.24 (2.77)	18.02 (2.90)	-1.244^{ns} (0.217)

^{ns}: Non significant, *: p<0.05

Table 6
Direct, Indirect, and Total Effects of the Research Model

Outcome		Determinant	Iranian Standardized estimates			Flemish Standardized estimates		
			Direct	Indirect	Total	Direct	Indirect	Total
Based on Figure 3	Deep learning	Intrinsic motivation	0.404	-	0.404	0.319	-	0.319
		Extrinsic motivation	-0.327	-	-0.327	-0.197	-	-0.197
		University facilities and support	0.333	0.051	0.384	-	-0.053	-0.053
		Classroom climate	-	0.071	0.071		0.023	0.273
		Educational goals and contents	0.327	0.153	0.480	0.250	0.093	0.093
		Teaching and assessment	-	0.120	0.120	-	0.055	0.055
	Surface learning	Intrinsic motivation	-0.349	-	-0.349	-	-	-0.520
		Extrinsic motivation	0.385	-	0.385	-0.520	-	0.305
		University facilities and support	-	-0.013	-0.013	-	0.082	0.082
		Classroom climate	-	-0.084	-0.084	-	-0.040	-0.040
		Educational goals and contents	-	-0.132	-0.132	-	-0.151	-0.151
		Teaching and assessment	-	-0.126	-0.126	-	-0.086	-0.086

effect on intrinsic motivation. In the Flemish context, teaching and assessment had the most effect on extrinsic motivation, and educational goals and contents had the most effect on intrinsic motivation. In addition, in the Iranian context, the most dominant determinant was educational goals and contents for both surface and deep learning. In the Flemish context, the most dominant determinant was educational goals and contents for sur-

face learning and classroom climate for deep learning (Table 6).

Figure 2 represents the effect size of educational factors on students' achievement motivation and learning approaches.

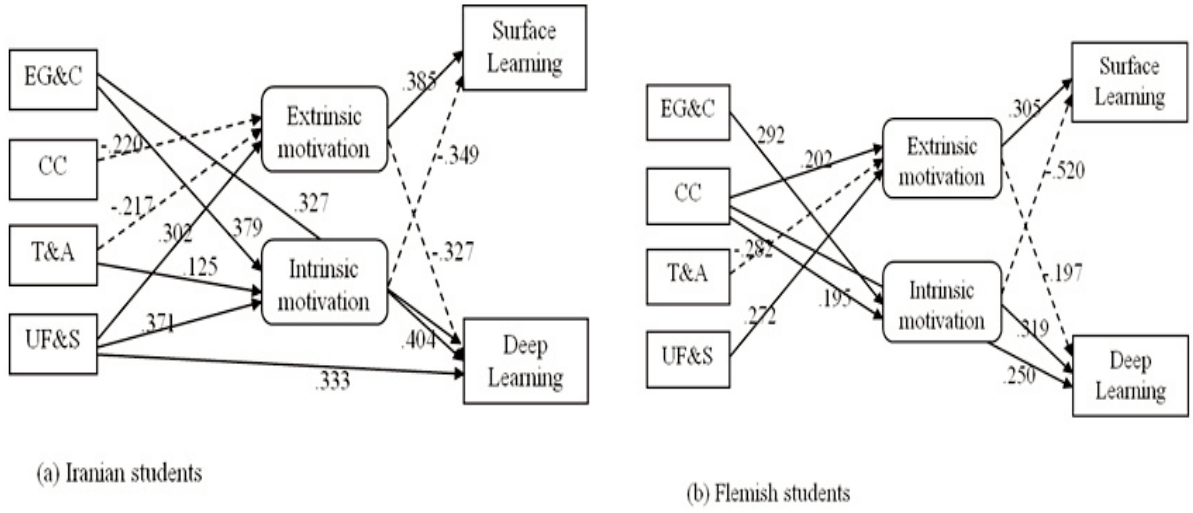

Figure 2. Path analysis diagram

DISCUSSION AND CONCLUSION

In this study, agricultural students from two different contexts, Iran and Flanders, were selected, and educational factors influencing their achievement motivation and learning approaches were investigated. One objective of our study was to examine the findings from a learning context to different context to study if the results were country-specific or if they could be generalized to other countries. In this study, the researchers examined the differences of two groups and gender differences in students' achievement motivation, learning approaches and their views regarding educational factors; and modeled the relationships between students' views regarding educational factors with their achievement motivation and learning approaches. The two groups' intrinsic motivation did not appear to be markedly different. On the contrary, there was significant difference between the two groups on extrinsic motivation. In addition, a significant difference between the two groups on the learning approaches has been found. Iranian student used deeper approaches for learning compared to Flemish students. It seems that learning approaches are context dependent (Case & Marshall, 2004). Aguinis and Roth (2005) found that cultural influences were a key issue when considering student learning processes. In both groups, there were no significant differences between males and females on intrinsic and extrinsic motivation. This result is accordant to Cokley et al. (2001) and Ligon (2006). Extrinsic motivation can change to intrinsic motivation and vice versa (Deci, 1975). Therefore, learning environment should be positive and supportive to intrinsic motivation. About the learning approaches, the findings showed that in Iranian group, female students had significantly higher score on surface learning than male students. In Flemish group, the differences were not significant. Shokri et al. (2006) found that there were significant differences between males and females on surface learning. Yet no significant difference was found on deep learning. It is worthy of mention that the surface approach is usually connected to recreation of words through rehearsal strategies and rote learning. Accordingly, when stu-

dents study only for passing the course, they go over and over the materials and memorizing them, which means that they apply surface learning. Therefore, it is recommended that professors stress on real motivation instead of grades for motivating students.

In this study, the researchers have taken the achievement motivation as a mediator between effective factors and learning approaches in each learning context. Firstly, we assessed external factors on achievement motivation as dependent variable. Of the educational factors, The similarity was found in the two groups (Iranian and Flemish) on the basis of the most effect of "educational goals and contents" (EG&C) on intrinsic motivation. "University facilities and support" (UF&S) and "teaching and assessment" (T&A) had the most effect on extrinsic motivation in the Iranian and Flemish contexts, respectively. Second, according to the total effects on each of the learning approaches, we found another similarity in the two groups (Iranian and Flemish) on the basis of the most negative effect of educational goals and contents on surface learning. In the Iranian context, this factor had also the most positive effect on deep learning. In contrast, in the Flemish context, the most positive effect on deep learning was for classroom climate. In general, it is concluded that students' achievement motivation is enhanced, and they use deep learning not only when educational programs are adapted to the individual needs of learners and to the needs of agricultural sector, but also when learning environment emphases participation and responsibility and educational climate is positive and supportive. In both groups (Iranian and Flemish students), intrinsic motivation had positive effect on deep learning and negative effect on surface learning. On the contrary, extrinsic motivation had negative effect on deep learning and positive effect on surface learning. To describe the findings, we would like to point to the importance of intrinsic and extrinsic motivation to learning and academic performance. Intrinsically motivated students concentrate more on mastering material than extrinsically motivated students, leads to deep learning, which Barron and Harackiewicz (2001) also cited in their study. The findings are of interest as it is in line with the findings of the studies done by Felder and Brent (2005).

For both studied communities, consultation with students about their future career in agriculture and invitation of successful people in agriculture to give lectures for students can be beneficial to motivate students. Each university should have a specialized consultation center. Students may need to know more about how they can increase their quality of learning, by using deep approaches to learning. Since globalization creates a great change in agricultural curricula worldwide (Kidane & Worth, 2012), it is recommended that adequate attention be paid to the development of new curricula, in which educational contents be connected more to the world experiences and career. Since approaches of teaching and assessment can affect students' use of deep or surface approaches for learning, it is recommended that professors use constructivist approaches to teaching -which focus on students as active participants in the process of knowledge acquisition. Professors would emphasize on collaborative learning in the classrooms in order to help students accomplish assignments that it is difficult to be accomplished individually, through creating conditions for students to help each other and handling knowledge, skills, and resources within each group. This research was not without limitations. In this study, only quantitative methods were used. In further studies, qualitative data can be gathered using interviews and observation to get a more detailed and deep understanding of motivation and learning of agriculture students.

ACKNOWLEDGMENTS

The authors gratefully acknowledge students

who kindly participated in this study.

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How to cite this article:
Pouratashi, M. & Zhu , C. (2018). How students' views on educational factors influence their achievement motivation and learning approaches? comparison of perspectives. *International Journal of Agricultural Management and Development, 8*(4), 539-551.
URL: http://ijamad.iaurasht.ac.ir/article_543722_e5ed684a9aa7b26148c5cc35127b7fee.pdf