RELATIONSHIP MODEL OF PERSONALITY, COMMUNICATION, STUDENT ENGAGEMENT, AND LEARNING SATISFACTION

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Abstract. This study aims to examine the engagement as a mediating variable of the relationship between personality and communication with satisfaction. This study was conducted at business school in Indonesia with 307 students who are still active as a respondent. Survey research was conducted over four months by questionnaire that has been well-established that was taken and modified from previous studies. The results of this study indicate that student engagement mediates the relationship between personality and communication as independent variables and satisfaction as the dependent variable. Extroversion personality and communication significantly positive effect on student engagement in all three dimensions (vigor, dedication, and absorption). In addition, this study also showed that engagement and satisfaction are two different variables, but correlated, and there was no difference in terms of gender differences involvement.

Keywords: big five personality, internal communication, student engagement, learning satisfaction.

JEL Classification: I23, M12, O15.

1. Introduction

Engagement is a relatively new concept, it is important, and much in demand by researchers and practitioners (Macey, Schneider 2008; Rothman, S., Rothman, S. (Jr.) 2010; Harter *et al*. 2002; Bakker *et al*. 2008). According to Saks (2006), it appears the concept of engagement of practitioners, instead of academics, so that only a few researchers who conduct research on engagement. However, an engagement gets a great attention both from the company as well as in the academic literature (Saks, Gruman 2011; Rich *et al.* 2010; Saks 2006). This is because engagement has been described as a key control in attitudes, behavior, and performance of individuals in order to improve performance, productivity, ownership, financial, and income of the shareholders of the company (Harter *et al*. 2002; Bates 2004; Richman 2006). In other words, engagement is a key of the organization's success in winning the competition.

Research of Engagement has been done in the company, but a little research has been conducted on the engagement of an educational institution. Comprehension of engagement has been escalated not only on company, but also on student engagement in school and engagement in learning. The engagement associated with achievement in school and a favorable outcome such as social welfare and psychological well-being (Crick, Goldspink 2014). Students that are involved will be motivated and will increase the complexity of a college. These complexities include of education funding, accountability, and oversight of education to improve the quality education received by students (Devlin *et al*. 2009).

Definition and understanding of engagement is overlap with other constructs such as organizational commitment and organizational citizenship behavior (Saks 2006). However, in the academic literature, engagement is defined as construct different and unique. Engagement includes components of cognitive, emotional, and behavioral related to performance in accordance with the role of the individual. Engagement is related with a variety of results that can be enjoyed by the organization, such as loyalty, increased productivity and profitability, as well as labor turnover, absenteeism, and desire out of the organization declined (Harter *et al.* 2002). In addition, the engagement also has positive impact on psychological well-being (May *et al*. 2004; Rothman, S., Rothman, S. (Jr.) 2010).

Schaufeli *et al*. (2002a) and Bakker *et al.* (2008) said that engagement is a state of positive thinking and excited associated with a task or job and is characterized by vigor, dedication, and absorption. Vigor is strength or energy or power, excitement, desire to invest his efforts on the job. Dedication is an ability not to get tired easily, and persevering in the face of difficulty, devotion, or sacrifice which is a strong engagement in the work, enthusiasm, and a sense of pride, inspired, and challenged. Absorption is pleasant conditions in the job or task, felt the time passed so quickly, and was not able to shed jobs or duties.

Macey and Schneider (2008) stated that the engagement is a job satisfaction and also a few studies have attempted to distinguish between engagement and job satisfaction. However engagement can also increase job satisfaction and organizational commitment, as well as decrease the desire to leave the organization (Saks 2006). Based on the results of previous studies, engagement associated with work such as job satisfaction (Yakin, Erdil 2012). According to Luthans and Peterson (2002), engagement is a significant predictor for the desired organizational outcomes such as job satisfaction, productivity, profitability, and the desire to remain in the organization. In educational institutions, job satisfaction can be referred to as the satisfaction of learning or learning satisfaction.

Furthermore, the engagement is the attitudes and behavior (Little, B., Little, P. 2006). The behavior of individuals is determined by situational or environmental factors or work and personal factors (Rothman, Welsh 2013). In Theory of Organizational Behavior, both situational factors and personal factors or dispositional is an antecedent in

explaining behavior in the workplace such as engagement. Previous research states that the interaction between situational factors and personal factors such as personality will influence the attitudes and behaviors (Ilies *et al.* 2006; Bono, Judge 2003; Judge *et al.* 2005). Some previous research has examined the relationship between engagement and personality. Langelaan *et al.* (2006) examined the relationship between engagement and burnout with dimensions of emotional instability personality (neuroticism) and openness personality dimensions (extraversion). Kim *et al.* (2009) suggested a negative relationship between engagement and emotional instability and a positive correlation between the personality dimensions of conscientiousness and engagement. Bakker *et al.* (2012) showed that conscientiousness positively related to engagement.

Some researchers claim that the concept of engagement is an individual's emotional commitment to the organization to engage psychologically, have the desire and ability to achieve the goals and objectives of the organization (Iyer, Israel 2012). This is what requires all members of the organization to develop internal communication. Clear communication and information within the organization will allow individuals to work and achieve its objectives are aligned with organizational goals. Communication within the organization is also associated with engagement. Employees will see their leaders can be trusted if they can communicate intensively and can provide accurate information. Sufficient explanation accompanied by appropriate feedback and quickly will increase confidence (Folger, Konovsky 1989). Leader who is able to explain the decision will increase the confidence of her followers (Konovsky, Cropanzano 1991; Sapienza, Korsgaard 1996). Open communication will encourage leaders convey ideas and thoughts so as to increase the trust. Lack of communication and information will lead to distrust, dissatisfaction, indifference, and the desire to leave the organization (turnover intention) and cause personal crisis. Therefore, to build engagement, internal communications required a clear, honest, concise, and timely.

Social Exchange Theory is a prominent theoretical paradigm in understanding the relationships in the workplace and employee attitudes (Cropanzano, Mitchell 2005). Meanwhile, the relationship between personality variables and the behavior of individuals in the workplace is based on the Self-Identity Theory (Karanges *et al.* 2014). The purpose of this study was to examine the relationship between constructs based on the principles of social exchange and identity. This study has built a model of relations, where the three-dimensional of engagement would mediate the relationship between conscientiousness personality and extraversion personality as well as the communication as the independent variables and satisfaction as the dependent variable. Furthermore, this study also tested whether the engagement and satisfaction are two different constructs given previous research suggest that both constructs are overlapping each other.

Engagement research was important, because the engagement will create prosperity, productivity, and improved performance and organization (Harter *et al.* 2002; Schaufeli *et al.* 2002a). Attention of researchers on engagement escalated of recent times both in

academics and practitioners. Definition of engagement also varies among practitioners and academics. The researchers describe the engagement as individuals scientifically motivated (Steele, Fullagar 2009). Individuals engaged in the activity for its own sake, not as a consequence of extrinsic (Schaufeli *et al.* 2002b). Research on engagement in academic field is very limited. Nevertheless, research findings indicate that students can also experience engagement in academic activities. This research was conducted at business school in Indonesia with undergraduate students who are still active as respondents.

2. Theoretical review and hypothesis testing

2.1. Engagement

The term engagement in the work was first presented by Kahn (1990) describes a new approach to motivating employees using the view that behavior is based on three dimensions: the physical engagement, emotional engagement, and cognitive engagement. According to Kahn (1990), engagement is a multidimensional construct. Individuals may be engaged in emotional, cognitive, and physical. Psychological engagement and organizational behavior require emotional and cognitive engagement. To be emotionally engaged, individuals will establish meaningful relationships with others, such as with colleagues and leaders, as well as the experience of empathy and concern for the feelings of others. According to Kahn (1990), individuals may be engaged only in one dimension, and not in another dimension. However, the more individuals engaged in each dimension, then the stronger engagement. In all personal engagement, then the individuals will feel engaged when aware cognitively their meaningfulness (e.g., understand what is expected of their organization, how to form strong relationships with co-workers and leaders, or feel a sense in the workplace, and connect emotionally with other people).

Engagement is a positive relationship between individual and task or job that is characterized by feelings of meaning, competence, and has influence (Macey, Schneider 2008). Work engagement is positive emotions that can lead to the spirit or energy that will be used individually to devote himself to his work. Individuals who are passionate and dedicated to spend time and energy to carry out his duties because they are too busy doing the job. The concept of engagement in the work has been conceived as a variable that fluctuates from day to day (Xanthopoulou *et al.* 2009). However, engagement in work showed a relatively stable phenomenon associated with the presence of specific job and continuous organizational characteristics (Macey, Schneider 2008).

Individuals who do not feel engaged in the work will disengage and withdraw cognitively and emotionally. According to Hochschild, employee disengagement showed low performance, unwillingness to try or effortless, and stiffness (May *et al.* 2004). Employee disengagement could be due to a lack of social interaction in the workplace, just get a little autonomy in the workplace, and feel that the work is not important

(Luthans, Peterson 2002). Individuals who are not engaged personally would always avoided or defensive and tend to avoid its role in the workplace, and do not want to deal with co-workers (Handa, Gulati 2014). Individuals will show its performance when they find that their role means, secure environment, and the availability of resources to carry out its work.

Furthermore, other researchers looked at from a different perspective states that stress and burnout is the opposite of engagement and being on the same continuum with engagement (Maslach *et al*. 2001). Maslach *et al*. (2001) describes the engagement of the three dimensions of attitudes, namely the spirit or energy, devotion or sacrifice or dedication, and fun. These three dimensions are based on three-dimensional Kahn (1990) which was also presented by Schaufeli *et al.* (2002a) and Bakker and Demerouti (2007). The concept of measurement and their engagement is then developed and perceived as an important concept that is necessary to test the validity and reliability of the measuring instrument. Some researchers then developed a measurement tool based on the concept of job engagement (see e.g., May *et al*. 2004; Saks 2006). Rich *et al*. (2010) adopted a conceptual framework Kahn (1990) and then develop and test the validity of measurement scale while maintaining the dimensions of physical engagement, emotional engagement, and cognitive engagement.

The subsequent researchers then evaluated the concept of work engagement and prepare a meta-analysis to examine the antecedents and consequent of work engagement (see e.g., Christian *et al*. 2011; Crawford *et al.* 2010). Work engagement is a relatively new concept and is often debated. Engagement show workmanship and simultaneous expression of individuals in that task behavior indicates to do with work, others, personal condition (physical, cognitive, and emotional), active, and performance (Kahn 1990). Individuals engaged will use her full and formal performance with the power flowing into the physical, cognitive, and emotional of that individual (Kahn 1990; Rich *et al.* 2010). Individuals engaged not only physically be at work, but more important is the individual psychologically more give attention, integrated, and focused on the work and performance. Individuals that are engaged will be able to finish the job. Individuals with high engagement will experience psychological condition and physical condition of healthy, creative in the workplace, and using all his personal resources, experiencing positive emotions in the workplace, to transfer positive engagement conditions on others, and receive high performance assessment (Bakker 2009; Bakker, Demerouti 2008; Bakker *et al*. 2004; Strausser *et al.* 2011). Engagement is also a motivation that involves the allocation of its resources to achieve its performance.

Several studies have shown inconsistency theoretically and empirically, especially in the three-factor structure of engagement and relationship with other concepts (Vecina *et al*. 2012). Some researchers suggest that engagement includes three dimensions (Schaufeli *et al*. 2002b, 2002a). Several other researchers stated that the engagement of only one dimension (Hallberg, Schaufeli 2006). Wefald and Downey (2009) who

conducted research using students as respondents did not support the engagement of the third dimension. Meanwhile, Hallberg and Schaufeli (2006) stated in his research that the engagement could include a one-dimensional or three-dimensional.

This study uses three-dimensional engagement developed by Schaufeli *et al.* (2002a, 2006), Bakker *et al.* (2008) which included the spirit or energy (vigor), dedication, and absorption. Macey and Schneider (2008) stated that the engagement mediates the relationship between antecedents (such as job characteristics, leadership, and personality) and outcomes (such as task performance and contextual performance). Engagement is better known by practitioners rather than in theory and empirical research. Defining the concept of engagement is also similar to other first known, such as organizational commitment and organizational citizenship behavior, or is defined as the emotional and intellectual commitment to the organization, or the number of businesses who "deviant" individual shown in the workplace. Macey and Schneider (2008) states that the engagement is a concept that overlaps with satisfaction, organizational commitment, and empowerment, even the engagement of a merger of these constructs. Based on this, the research questions that can be asked is whether the three dimensions of engagement mediates the relationship between personality and communication as antecedents to job satisfaction as a consequence of this research? Based on the above discussion, hypothesis of this study is offered, that is:

H1: There is a difference between engagement and learning satisfaction.

2.2. Engagement and personality

Lately, personal factors also included as antecedent construct of engagement (Xanthopoulou *et al*. 2009). Engagement is a construct that gets attention because it is associated with positive psychological conditions to examine how non-cognitive factors affecting results are positive (Bakker *et al*. 2008). Judge *et al*. (1997) emphasize the personal aspect as an antecedent of individual behavior in the workplace. One of the personal factors that influence individual behavior is personality. Personality is a set of personal characteristics that determine an individual's perception and reaction to the situation. Personality is also an individual choice or individual ways of behaving, thinking, and feeling. Personality enable to measuring actual behavior. The importance of understanding personality is personality can affect performance (Tett, Burnett 2003; Barrick *et al*. 2002) and satisfaction (Arvey *et al*. 1989).

Research on the Big Five Personality is developed by Costa and McCrae. Five personality dimensions include emotional instability or neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Neuroticism is an individual's inability to emotionally adjust to its environment. Neurotic individuals are individuals who experience negative feelings such as fear, sadness, anger, shame, and guilt, has no rational idea, not able to control the conscience, and depressed by the negative emotions that deviate from the environment. Extraversion dimension is excited, optimistic, and

happy. Individuals who are extroverts have high social life, active, talkative, and assertive. Openness to experience is characterized by imaginative, sensitive, listen to your heart, intelligent, curious, and independent. Individuals are usually open to new and different things, and emotionally upbeat. Agreeableness is the tendency of individuals to become donors or love of neighbor. Such individuals usually feel sorry and want to help others. While of conscientiousness is characterized by being able to control themselves, focus, able to plan and organize well, and be able to work or completing a task or job. According to Barrick and Mount (1991), conscientiousness, neuroticism, and openness to experience are associated with the performance.

According to Macey and Schneider (2008), engagement is associated with personality, especially conscientiousness. Meanwhile, Langelaan *et al.* (2006) stated that engagement is negatively related to neuroticism and positively related to extraversion. Kim *et al.* (2009) stated that of the five dimensions of personality called the Big Five Personality, only conscientiousness dimension effects on engagement, while neuroticism dimensions and extraversion does not effect engagement. Ongore (2014) stated that his research result showed the all of dimensions in the Big Five Personality affect engagement. Personality is considered as an important variable to influence the individual's engagement in the work. For example, two people working in the same environment can have different levels of engagement for different personality traits. Schaufeli and Salanova stated that only emotional instability and openness are associated with engagement, while openness to new experiences even unrelated (Ongore 2014).

Conscientiousness dimension is characterized by responsible, dependable, have a plan, manage, persistent, using deep consideration, and achievement-oriented (Barrick *et al.* 1993). These characteristics indicate that individual with high conscientiousness is an individual who has a positive attitude and motivated in their work. In general, they also have a way to support the achievement of goals and have the ability to hold social interaction. Although individual uses task-based achievement, but the individual who has the dimension of conscientiousness also emphasizes the goal-achievement. Individuals with a high degree of conscientiousness will have a high citizenship behavior and they are able to perform their role in the workplace. Conscientiousness dimension is positively associated with success or achievement. Individual who have high caution is likely to work to achieve the goal (Smithikrai 2007). In addition, individuals with high conscientiousness convinced that the work has a special meaning for him and experiencing higher psychological fulfillment of the job compared to individuals with low levels of conscientiousness (Li *et al*. 2007), and they are able to regulate behavior in more effective (Wallace, Chen 2006). Conscientiousness personality is a tool to achieve employment success as motivation and a desire to be more productive (Judge, Ilies 2002). In other words, individuals with high conscientiousness demonstrated its capacity to function and develop in a way that is productive and can get things done faster.

Furthermore, individuals who have the personality dimension of extraversion tend to be friendly, assertive, talkative, ambitious, and gregarious, so that the person using

the work environment to show life that enable them to fulfill their aspirations and to show his talents (Hurley 1998). Individuals who have an extraversion personality are usually more stable, calm, optimistic, aggressive action indicated by the results of the work is complete and satisfactory. They generally feel comfortable working with other people and have a positive emotional reaction, as well as more comfortable expressing themselves. Smithikrai (2007) suggested a positive correlation between the extraversion personality dimension and success in work, especially in jobs that require personal contact. Previous research supported the relationship between extraversion, neuroticism, and conscientiousness with job engagement (Kim *et al.* 2009; Langelaan *et al.* 2006; Liao *et al.* 2013). Based on a wide range of exposure on the relationship engagement and personality, then the hypothesis of this study is offered.

H2: Conscientiousness personality has positive effect on engagement.

H3: Extraversion personality has positive effect on engagement.

2.3. Engagement and internal communication

Ilies *et al*. (2006) showed that the interaction between personality and situational factors in the workplace affect work outcomes or individual performance. The resources in the workplace such as social support from coworkers and supervisors, performance feedback, the variation of expertise, autonomy, and learning opportunities within the organization positively related to engagement (Bakker, Demerouti 2007). The resources in the workplace or place of learning is situational factors that can play a role both as an intrinsic motivator for helping growth, learning, and development of an individual and as an extrinsic motivator because it is a way or means to achieve goals. Several previous studies have shown a positive correlation between the resources that exist in the workplace and engagement (Schaufeli, Bakker 2004). Research results of Hakanen *et al*. (2006) showed that information, job control, supervisor support, innovative climate, and social climate were positively related to engagement.

Some studies also emphasize and underline the importance of communication for organizational success and showed that the quality of communication in organizations dealing with employees, satisfaction, and motivation (Orpen 1997). Communication and organizational climate will improve productivity. There is a relationship between the amount of time spent on communication and job satisfaction. Organizational communication includes techniques for transferring information, ideas, and assessment from one individual to another. Organizational communication is a communication and interaction among members of the organization. Organizational communication is a dynamic process and involves techniques, networking, and complex. Organizational communication is important for organizational members to be able to better engage in the organization, convey information, build trust and cooperation with each other, understand and coordinate the work, improve communication and learning climate, and to achieve individual satisfaction and all members of the organization (Ali, Haider 2012). This study uses

organizational communication as one of the independent variables. This organizational communication hereinafter referred to as internal communication.

Internal communication can serve to motivate all organizational members. Good internal communication will be able to improve the morale of individuals, making people feel a part of the organization's members and will encourage motivation from within the individual (intrinsic motivation), which in turn will improve the satisfaction of the individual. McCleod and Klarke underlined that communication is an important factor that can improve individual performance through engagement (Dromey 2014). Good internal communication will encourage engagement. Individuals also require clarity of communication and information from the head to determine whether it plays a role in accordance with the vision of the organization and its leaders.

Good internal communication will improve intellectual ability and creativity of employees to produce benefits for the organization (Mishra *et al*. 2014). Transparent organization will provide information widely. Openness in communication and providing information indicate a strong relationship between members of the organization and shows the trust between members of society together and leaders. Internal communications provide positive benefits to the organization, such as an enhancement in commitment and confidence, which in turn will have a positive impact on relationships with all stakeholders in the organization, including customers. According to Saks (2006), clear and intensive communication will increase engagement. Individuals within the organization will also be engaged when there is a positive relationship with the organization. Welch and Jackson (2007) also stated that internal communication is important in achieving the individuals engagement in the task or job. Leader need to communicate openly and consistently with all his subordinate.

Internal communication is part of the organizational context in which that engagement will occur (Bakker *et al.* 2011). Engagement is influenced by internal communication even well designed internal personal communication will improve engagement (Papalexandris, Galanaki 2009). Communication is the psychological needs of employees in which the organization will be able to maintain and increase engagement (Welch 2011). Based on an examination of the relationship between the various internal communication and engagement, hypothesis of this study is offered. That is:

H4: Internal Communications positive effect on engagement.

2.4. Engagement and learning satisfaction

Job satisfaction is an individual assessment of the work or cognitive variables, an affective reaction to the work, or an individual's attitude toward work (Weiss 2002). Weiss (2002) argued that job satisfaction is an attitude, i.e. positive or negative evaluation of individuals to work or work situation. According to Alarcon and Lyons (2011), job satisfaction is different from engagement in two respects. First, job satisfaction can

be experienced at different levels and is a function of perception and affect employment (Organ, Near 1985), while the engagement is the core or the content of such work (Maslach, Goldberg 1998). Second, research shows that engagement is positively related to requests or demands in the workplace, not like that job satisfaction is negatively related to requests or demands in the workplace (Saks 2006). Learning satisfaction is also a construct that is conceptually similar to job satisfaction. Learning satisfaction is an assessment of the students' academic and social processes are done for college.

Learning satisfaction is an evaluative description of the task or job and task or job characteristics that are characteristic of the attitude of learning, while the engagement is a description of the individual experiences resulting from work (Christian *et al*. 2011). Moreover, although there are similarities with other concepts theoretically, but difference between engagement and organizational commitment is not easily extinguished in the workplace (Vecina *et al*. 2012). Empirical research on the engagement reported that high engagement can increase satisfaction and organizational commitment, lower absenteeism and a desire to get out of the organization, improve well-being and behavior, improve behavior beyond a role played, improve performance or achievement, increase personal initiative, behavior proactive, and motivation to learn.

Satisfaction is an attitude that shows the inner feelings or pride in doing a particular task or job. Satisfaction is how much people loved the task or job. Macey and Schneider (2008) stated that the concept of engagement is overlapping with satisfaction, organizational commitment, and empowerment, as well as the incorporation of these constructs. Some researchers also stated that although there are similarities between these constructs, but the research and theory suggests that the engagement is a different conceptually and empirically with these constructs (Hallberg, Schaufeli 2006; Schaufeli, Bakker 2004).

According Viljevac *et al*. (2012), the limitation of engagement is unclear. Some researchers suggest that engagement also includes other constructs such as satisfaction, organizational commitment, a desire to remain in the organization, and proactive behavior, and citizenship behavior (Frank *et al*. 2004; Macey, Schneider 2008; Bhatnagar 2007; Heger 2007). Some researchers suggest that engagement is similar to other constructs such as satisfaction, positive influence, and organizational commitment (Newman, Harrison 2008). According to Rich *et al*. (2010), the engagement is an individual who is a holistic concept of the role, while other concepts are similar to the narrower concept of the individual. Hallberg and Schaufeli (2006) also prove that engagement and organizational commitment are different constructs. Wefald and Downey (2009) and Alarcon and Lyons (2011) in his research also supports the idea that engagement and satisfaction are two different constructs.

According to Rich *et al*. (2010) and Hallberg and Schaufeli (2006), correlations between the constructs that are similar to the various variables that are antecedent variables may indicate that engagement, satisfaction, organizational commitment, intrinsic motivation, and positive influence is constructs that are different from each other. Indi-

viduals who are engaged will have pleasant emotional state in the workplace or learning places that show a high level of satisfaction (Biswas, Bhatnagar 2013). They will generally do a good job and is able to achieve the target. Previous research stated that there is a positive relationship between engagement, psychological conditions, satisfaction, and a desire to remain in the organization (Handa, Gulati 2014). Saks (2006) also stated that such engagement is positively associated with satisfaction, organizational commitment, and organizational citizenship behavior, and negatively related to the desire out of the organization. However, the relationship between these concepts is still a debate among researchers, and the results showed no empirical research (Little, B., Little, P. 2006). Meanwhile, several studies have shown a correlation between these concepts. Based on an examination of the various attachment relationship work and job satisfaction, the hypothesis of this study is offered, that is:

H5: Engagement has positive effect on satisfaction.

2.5. Student engagement

The researchers discussed the engagement as a psychological construct in the work setting. Therefore, the researchers were also able to use the engagement in research on college students. In the academic sector, engagement shows the active engagement of students in learning activities which also includes the engagement of the habits and behavior skills (concentration, attention, effort), emotional engagement which includes motivations and feelings (interest and excitement in learning), and cognitive engagement that includes beliefs and values (the use of cutting-edge instructional strategies) (Reeve 2012). Underlying psychological constructs employees and students are the same. The difference is only the setting in which the work was done. The researchers did some research on engagement as much research on the attitudes of employees. This study uses students as a source of data to support the research hypothesis regarding the students' engagement.

Students demonstrate the level of engagement through a wide range of academic behavior. According to Skinner and Belmont (1993), students who have a high engagement showed behavioral engagement in learning activities associated with positive emotional states. They chose the tasks according to the competence or ability, conducting when you get a chance, struggle and concentrate fully in the learning task. In addition, students who have engagement will show positive emotions during the conduct of activities, including enthusiastic, optimistic, curious, and show concern or interest in learning.

There are two reasons why students are not engaged, that is because there is no chance or because students are not aware of the availability of facilities in organization for them (Bisson 2007). Engagement can encourage various activities such as exercises, present in cultural events, and more participate in community service or community activities. They are also generally more satisfied with their experiences on campus and looked at the campus is a positive organization. Research results of Wefald and

Downey (2009) showed overlap between student engagement and academic satisfaction. Student engagement is also associated with time and physical energy used by students to undertake activities in the academic experience. In addition, engagement is related with students desire to learn or attempt to subjects, practice, achieve or obtain feedback, analyze, and solve problems (Kuh 2003; Robinson, Hullinger 2008).

Student engagement is a topic that attracted the attention of researchers, because based on previous research, student engagement was negatively related to dropping out of school (Alexander *et al*. 1993) and positively associated with the development and student achievement (Devlin *et al*. 2009; Marks 2000). This is due to the engagement of more effective in mobilizing interest, energy, excitement, and curiosity of students (Bakker 2005; Patrick *et al*. 2000). Engaged students will experience positive emotions which includes happiness, interest, joy, enthusiasm, better health, creating jobs and personal resources, and transferring engagement in others (Bakker, Demerouti 2007, 2008).

Bakker and Schaufeli (2008) argues that there are still required a lot of research on the antecedents of student engagement in the education sector that is relatively limited. Harris (2011) stated that the dimension of student engagement may include cognitive, psychological or emotional, behavioral, and academic dimensions. Behavioral engagement is important activities that are measured by attendance, adherence to rules, and participation in activities (Appleton *et al*. 2008). Cognitive engagement is associated with a personal investment in the task, which includes the development of skills, setting goals, self-regulation, and commitment to the mastery of an activity (Lee, Anderson 1993). Meanwhile, emotional engagement shows affective and psychological ties to the institutional activities. Emotional engagement shows enthusism, interest, excitement, pleasure, and sense of belonging (Marks 2000).

Students engagement in academic activities include academic engagement is directly related to the behavior of the learning process and social engagement is the interaction with the teachers (Finn *et al*. 2003). Student engagement is also influenced by personality characteristics. Based on previous research, the four factors of the five factor model of personality associated with academic performance. The fourth factor is conscientiousness, openness to experience, emotional instability or neuroticism, and extraversion, while agreeableness personality is not associated with engagement (Caspi *et al*. 2006). Based on study conducted Caspi *et al*. (2006), conscientiousness personality has the strongest relationships with academic performance and is the most stable personality, while extraversion personality still has controversial relationship with engagement. Saks (2006) found that student engagement is essentially the same as the engagement of employees and expected to mediate the relationship between situational and personal factors as antecedents and attitudes which in this case is satisfaction. Based on the above discussion, the hypothesis of this study is offered. That is:

H6: Student engagement mediates the relationship between personality and communication as independent variables and satisfaction as the dependent variable.

3. Research methods

3.1. Samples and research procedures

This research was carried out on students who are studying at the business school in Yogyakarta, Indonesia. Student engagement in campus demonstrated by their engagement in the activities of groups, organizations, and other activities aimed at improving skills in leadership, organization and development of various other personal aspects (McCannon, Bennett 1996). Student engagement is critical to its success both on-campus and off-campus because of engagement or participation can help the development of leadership and expertise in the organization.

The researchers discuss engagement in the work as a psychological construct in the work settings. Therefore, the researchers were also able to use them in researching student engagement in a university (Wefald, Downey 20009). Underlying psychological constructs, employees and students are the same. They differ only in the setting in which the work or activities performed. Researchers had previously done some research on engagement as research on work attitudes and employees. This study uses students as a source of data to support the hypothesis of the student engagement. Wefald and Downey (2009) showed overlap between student engagement and academic satisfaction or learning satisfaction.

This study aims to examine the effect of the five dimensions of personality variables in particular conscientiousness dimensions and extraversion as personal or dispositional factors and internal communications as situational factors on the three-dimensional student engagement. This study also aims to examine the influence of these three dimensions of student engagement on learning satisfaction or academic satisfaction, as well as to test the three dimensions of engagement as mediator of relationship between personality variables (particularly on conscientiousness and extraversion personality) and communication as antecedent variables with the satisfaction of learning as a consequence variable.

This study is a survey research using a questionnaire that spread is conducted by researcher. The questionnaire was distributed to individual data collection on respondents. Samples were undergraduate students who are active at business school located in Yogyakarta, Indonesia were collected by using convenience sampling method. Students of business school were chosen as the respondents of this study because in general the students understand how to do business. They also have experience in business entrepreneurship courses.

The survey was conducted about four months that is in August to December 2014. Compared with four other methods (e.g., survey interviews with direct face to face, a questionnaire was sent or by correspondence, the questionnaire was read by telephone, questionnaires via electronic media, or a combination of survey methods), method of questionnaire survey conducted itself is the best method (Cooper, Schindler 2008;

Neuman 2006; Sekaran, Bougie 2010). Research on personality, internal communication, and student engagement is important to improve and provide suggestion on how to improve learning satisfaction that is not because of the award.

Research by the individual as the unit of analysis requires samples with specific criteria or characteristics. Characteristics of the sample are used to convey the characteristics of the sample relative to the population. Samples intended to be representative of the population. The sample size also affects the accuracy or representation of the population, despite the large sample would indicate a high level of confidence or the greatest confidence in the study. The sampling method used in this study is a non-probability sampling. In this method, the elements in the population do not have the same probability to be selected as a sample in the study (Sekaran, Bougie 2010; Cooper, Schindler 2008). Non-probabilistic sampling technique chosen is convenience sampling. The criteria that is used to select the sample is undergraduate students that was still active at private universities in Yogyakarta, Indonesia who met for four months. In addition, this study uses self-assessment. The sample consisted of 307 people (with a response rate of 95.9%) of 320 persons. The amount is based on multivariate criteria, i.e., at least five times the number of items in the questionnaire questions this research (Hair *et al*. 2006). This study uses a 31 item questionnaire, so it must collect a minimum of 155 respondents. In addition, because this study used factor analysis to test the validity of the questionnaire, minimum number of respondents is 300 people (Hair *et al*. 2006). One of the characteristics of the studied demographic profile is gender. The respondents received a survey using a pen and paper. Respondents were assured anonymity and complete the survey during study hours.

3.2. Measurement

Instruments designed for the unit of analysis at the individual level. Each of the respondents in this study were asked to complete four types of questionnaires, the personality (especially conscientiousness and extraversion dimensions), internal communication, students engagement (passion, dedication, and absorption), and learning satisfaction. Questionnaire about personality and student engagement was taken and developed by previous researchers, namely Handa and Gulati (2014). Questionnaire on internal communication was taken from Harris (2006), while learning satisfaction questionnaire is taken from Pieterse (2012). Research questionnaires were then modified or adapted to research settings. This modification was associated with changes in the questionnaire by using Indonesian.

All scale measured with Likert scale with 5-point ranging from number 1. This study uses content validity to ensure that the sentences on each question can be understood by respondents. In addition, this study also uses the factor analysis as a way to test the construct validity and internal consistency with Cronbach's alpha to indicate the reliability of the measuring instrument. With varimax rotation and loading factor of at least

0.4 as suggested by Hair *et al.* (2006). Furthermore, to examine the relationship between independent variable and dependent variable, researcher used correlation. Furthermore, to examine the engagement of a third dimension as mediating variable model of the relationship between antecedents and consequences used structural equation modeling (SEM) using AMOS.

4. Results and discussion

4.1. Analysis of validity and reliability

This study used a questionnaire developed by previous researchers to translate from the original language into Bahasa Indonesia. To assess the validity of the measurement items all the variables, researcher tested content validity and construct validity. Content validity was used to assess the instrument measurements performed on the pre-analysis by asking the opinion of experts in the field of Organizational Behavior and Qualitative and Quantitative Research Methods. Measuring instrument or questionnaire was tested on 30 respondents who are students who have similar characteristics to the target population of the study as suggested by Sekaran and Bougie (2010). Researcher used factor analysis to examine the construct validity. To further simplify the interpretation and the search for a simpler structure, the researchers used a technique and orthogonal varimax rotation. Factor analysis (FA) was also performed on the constructs under study. Extraction executed factor and every eigenvalue greater than one (1) will be adopted. Varimax rotation performed to reveal each variable. Recorded using a loading factor loading above 0.50 as suggested by Hair *et al.* (2006) called as a result of testing construct validity practically significant. Factor analysis was conducted to test the construct validity. By using varimax rotation and loading factor of at least 0.4 as suggested by Hair *et al.* (2006) can be achieved construct validity of test results that can be said to be significant. Factor loading values recorded between 0527 and 0.803. Given all the items noted above extracted 0.4, there are three items that turned out to be deleted because it is declared invalid. Items that have construct validity based on the results of the factor analysis were then tested for reliability.

Furthermore, to assess the reliability of the measurement items all the variables tested the internal consistency with Cronbach alpha values. Cronbach alpha values of reliability tests measuring instrument in this study resulted in a score of 0.7210 for conscientiousness dimensions of personality, personality dimensions 0.5554 for extraversion, and 0.7743 to construct an internal communication. Meanwhile, the reliability of 0.8490 for the vigor dimensions of engagement, 0.7202 for the dedication dimensions of engagement, 0.7616 for absorption dimension of engagement, and 0.7854 to construct learning satisfaction. Based on the results of testing the reliability of the authors stated that the reliability of measuring instruments of this research is far above the cut-off line in particular internal consistency reliability as recommended by Hair *et al.* (2006).

4.2. Descriptive statistics

For statistical analysis, the researchers used a series of analysis of the relationship between all constructs or research variables using correlation analysis. Correlations between all constructs or variables used in this study are significantly positive. The relationship between each dimension of engagement is positive significantly, though weak. Correlation between personality dimensions of conscientiousness and extraversion as well as internal communication is positive significantly related, but weak. Meanwhile, the relationship between learning satisfaction and all variables used in this study is positive significantly, except for the relationship between learning satisfaction and extraversion dimensions. Standard deviation, reliability scale, and the correlation between all study variables are presented in Table 1.

Table 1. Mean, standard deviation, dan correlation among research variables

	Mean	SD	α	1	2	3	4	5	6	7
Conscientiousness	3.7549	0.5239	0.7210	1.000						
Extraversion	3.1661	0.6206	0.5554	0.274**	1.000					
Int. Communication	3.5562	0.6687	0.7743	0.031	0.004	1.000				
Vigor	3.2494	0.5161	0.8490	0.564**	0.384**	0.187**	1.000			
Dedication	3.6840	0.5812	0.7202	0.341**	0.114**	0.345**	0.527**	1.000		
Absorption	3.2937	0.5634	0.7616	0.227**	0.245**	0.267**	0.535**	0.459**	1.000	
Learning satisfaction	3.7883	0.6335	0.7854	0.282**	0.063	–0.088	0.438**	0.504**	0.401**	1.000

Notes: correlation is significant at the 0.01 level (2-tailed).

Based on Table 1, the mean of seven variables is between moderate and high (mean of 3.1661 to 3.75498) and the deviation is relatively moderate (between 0.5161 and 0.8490). In addition, all the correlations obtained are not too strong. Correlation between conscientiousness personality and extraversion personality are significantly positive ($r = 0.274$, $p < 0.01$). Correlation between conscientiousness personality and internal communication is not significant. Correlation between conscientiousness personality and vigor is significantly positive ($r = 0.564$, $p < 0.01$), correlation between conscientiousness personality and dedication is significantly positive ($r = 0.341$, $p < 0.01$), correlation between conscientiousness personality and absorption is significantly positive ($r = 0.227$, $p < 0.01$), and correlation between conscientiousness personality and learning satisfaction is also significantly positive ($r = 0.282$, $p < 0.01$). Furthermore, correlation between extraversion personality and vigor is significantly positive ($r = 0.384$, $p < 0.01$), correlation between extraversion personality and dedication is significantly positive ($r = 0.114$, $p < 0.01$), and correlation between extraversion personality and absorption

is significantly positive (r = 0.245, p < 0.01). However, correlation between conscientiousness personality and internal communication, between extraversion personality and internal communication and between extraversion personality and learning satisfaction are not significant. Furthermore, the correlation between each dimension of the positive engagement significantly, respectively r = 0.527, p < 0.01 between vigor and dedication, r = 0.535, p < 0.01 between vigor and absorption, and r = 0.459, p < 0.01 between dedication and absorption. The relationship between internal communication and learning satisfaction is not significant, but the relationship between internal communication and each dimension of positive engagement significantly i.e., r = 0.187, p < 0.01 between internal communication and vigor, r = 0.345, p < 0.01 between internal communication and dedication, and r = 0.267, p < 0.01 between internal communication and absorption. The relationship between learning satisfaction and each dimension of engagement is positive significantly, i.e., r = 0.438, p < 0.01 between learning satisfaction and vigor, r = 0.54, p < 0.01 between learning satisfaction and dedication, and r = 0.401, p < 0.01 between the learning satisfaction and absorption. Low correlation between these variables is likely due to the characteristics of the study variables.

4.3. Hypothesis testing results

Confirmatory Factor Analysis (CFA) is used to test the discriminant validity of the study variables. Specifically, researcher tested the model of seven variables in which conscientiousness personality, extraversion personality, internal communication, vigor of engagement, dedication of engagement, absorption of engagement, and learning satisfaction is the different latent factors. The strength of the relationship between conscientiousness personality, extraversion personality, internal communication, vigor of engagement, dedication of engagement, absorption of engagement, and learning satisfaction was examined through Structural Equation Modeling (SEM). The results of relationship model test show that no significant direct effect of all independent variables (conscientiousness personality, extraversion personality, internal communication, vigor of engagement, dedication of engagement and absorption of engagement) on the dependent variable (learning satisfaction). Furthermore, one of the goals of this study was to examine the influence of the vigor of engagement, dedication of engagement, and absorption of as mediating variables in the model of the relationship between conscientiousness personality, extraversion personality, and internal communications as an independent variable and learning satisfaction as the dependent variable. Therefore, Table 2 presents the results of testing the mediation models using structural equation model with two-stage approach.

Structural equation model in this study was designed and tested using AMOS 4.0 software program (Byrne 2001). The structural model is determined by allowing each item of any size to fit on the latent factors. At first, researchers dimensional analysis using confirmatory factor analysis or CFA which covers all measures to assess the relationship between latent variables and real products that serve as indicators of them.

Table 2. Analisis Model Mediasi

Keterangan	Beta (β)	Critical Ratio
Conscientiousness à Vigor of Engagement	−0.102	−0.400
Conscientiousness à Dedication of Engagement	−0.115	−0.537
Conscientiousness à Absorption of Engagement	−2.053	−0.707
Extraversion à Vigor of Engagement	0.980	4.021
Extraversion à Dedication of Engagement	0.725	3.508
Extraversion à Absorption of Engagement	0.990	3.739
Int. Communication à Vigor of Engagement	0.238	2.045
Int. Communication à Dedication of Engagement	0.533	5.384
Int. Communication à Absorption of Engagement	0.402	2.701
Vigor of Engagement à Learning Satisfaction	−0.524	−3.676
Dedication of Engagement à Learning Satisfaction	0.978	6.800
Absorption of Engagement à Learning Satisfaction	0.147	1.116

GFI = 0.977
CFI = 0.966
P = 0.000
Chi Square = 24,288
Df = 1

Furthermore, the results of testing mediation models vigor of engagement, dedication of engagement, and absorption of engagement on the relationship between conscientiousness personality, extraversion personality, and internal communication as independent variables and job satisfaction as dependent variables presented in Table 2. The results showed that the hypothesized model fit with the data ($\chi 2$ = 24.288; df = 0, p = 0.000; GFI = 0.977; CFI = 0.966).

Based on the results of examination model, the influence of conscientiousness personality on each dimension of engagement is not significant (hypothesis 2 is not supported). The influence of conscientiousness personality on engagement is only on absorption of engagement. The influence of conscientiousness personality on absorption of engagement is negative. This indicates that individual that is responsible for learning, have a plan to quickly complete his studies, and they more have a plan, the stronger desire to perform, the absorption of individual engagement is lower. Meanwhile, the effect of extraversion personality on engagement is significantly positive for the three dimensions (hypothesis 3 is supported). The stronger extraversion personality, then the individual will increasingly have a high engagement on vigor dimension, dedication, and absorption of engagement. Furthermore, the influence of internal communication on engagement is also significantly positive for all three dimensions of engagement

(hypothesis 4 supported). This suggests that the better internal communication and the more information a student, the student's engagement will be higher. The influence of vigor and dedication of engagement in learning satisfaction is also significantly positive, but the influence of absorption of engagement in learning satisfaction was not significant (Hypothesis 5 was partially supported). This shows that the stronger dedication of engagement, student will be more satisfied.

Based on Table 2 can also be stated that the three dimensions of engagement mediates the relationship between conscientiousness personality, extraversion personality, and internal communication as independent variables and learning satisfaction as dependent variable. This is evident in goodness of fit index or GFI is above 0.90 (hypothesis 6 is supported). Furthermore, this study also tested there is a difference between student engagement and learning satisfaction or academic satisfaction. Test results using a paired sample t-test result that there is a difference between learning satisfaction and engagement of the third dimension. Value T between learning satisfaction and vigor of engagement is 12.563, 0.000 significance, between learning satisfaction and dedication of engagement is 2.787, 0.000 significance, and between learning satisfaction and absorption of engagement is 19.966, 0.000 significance. These results indicate a difference between learning satisfaction and student engagement (hypothesis 1 is supported).

4.4. Discussion

The behavior of individuals is determined by factors extrinsic and intrinsic factors. This study focuses on academic behavior, especially in the lecture process with two types of antecedents, namely internal communication (extrinsic factor) and personality, especially conscientiousness personality and extraversion personality (intrinsic factor). Engagement is characterized by vigor, dedication, and absorption. Student engagement involves individuals who are controlled by the power of the personal (physical, cognitive, emotional, and mental) into its role in the workplace or the right to learn. The results of this study showed a relationship between the three dimensions of engagement, although the relationship is not very strong. The results showed a moderate correlation between the dimensions of engagement. This shows that the three dimensions can indeed stand alone. Britt, Deckinson, Greene, and McKibben states that a strong correlation between the three dimensions of the show that actually could work engagement is a single dimension (Wefald, Downey 2009). In addition, a moderate correlation between these three dimensions shows that the engagement variables, particularly the student engagement is reflective.

To previous research showed that variables such as personality can predict engagement, but research on the student engagement is still very little (Alarcon *et al*. 2011). The results of this study support the hypothesis proposed in part. The results of this study indicate that the extraversion personality is an antecedent to the third dimension of engagement (vigor, dedication, and absorption). Extraversion personality effect positively and significantly on all three dimensions of engagement. Extraversion

personality characteristics shown with a friendly attitude, talkative, dynamic, intimate, and be happy. Individuals are generally enthusiastic, optimistic, talkative, assertive, outgoing, happy, passionate, and active in various activities. This individual can easily communicate with co-workers and supervisors. Individuals who have an extraversion personality have positive feelings and emotional experience. The influence of personality characteristics on this engagement in accordance with research result of Macey and Schneider (2008) which states that the engagement is influenced by personality. Meanwhile, Hakanen *et al*. (2006) stated that the engagement is influenced by the environment such as communication and information.

The influence of extraversion personality on the third dimension of student engagement is very significant. Extraversion is going to make students better able to interact with their friends, the teachers, staffs, laboratory assistants, and all other academic community on campus. This is what can lead to greater student engagement on campus, both on passion, dedication or sacrifice or struggle, and the fun or pleasure or absorption to follow the academic process or learning process and social processes on campus. Based on the research results of Furnham and Medhurst (1995) shows that extraversion is positively related to engagement or participation in class. In addition, Caspi *et al*. (2006) study explained that students who are engaged or participate in campus is characterized as extrovert and unengaged students characterized as difficult to control emotional (neurotics). Individuals who open or have extraversion personality tend for looking and enjoy relationships with organized social exchange and feel comfortable in social situations. Such individuals tend to be proactive and always seek social support face various problems. In general, extrovert individuals are the talkative, active, friendly, outgoing, and enjoy the social environment, or often called person-oriented (Dougherty *et al*. 2008).

Meanwhile, the conscientiousness personality dimension only affects the absorption dimensions of student engagement. It was a negative influence. Conscientiousness personality has no effect on vigor and dedication to engage or individual sacrifice in academic activities on campus. However, the relationship between conscientiousness personality and third dimensions of student engagement is significant, though weak. Caution or awareness of students did not make too eager students in the academic process and less able to push the struggle or the sacrifices made by the students. Furnham and Medhurst (1995) which states that an extraversion personality influence the level of engagement or participation, and does not support the Furnham *et al*. (2002) research which states that conscientiousness personality effects on engagement.

In addition, the results of this study showed a negative influence conscientiousness personality in the absorption of student engagement in participating in academic process and social processes. This is due to the students just thought to follow the lectures and exams, while the social process that followed is a social process that makes the students get an assessment of non-academic activities on campus as graduation requirements.

The students generally do not want to get too preoccupied or enjoy the academic process. This condition is different from the engagement of employees in the workplace. In general, employees are engaged with a vigor, dedicated, and absorption to do the job because its where they work or do not want to leave the organization (Saks 2006; Macey, Schneider 2008; Robertson *et al.* 2012; Vecina *et al.* 2012; Hallberg, Schaufeli 2006).

The results of this study also showed a significant correlation between the three dimensions of engagement and learning satisfaction, although the correlation is weak. This is consistent with the results Harter *et al.* (2002) which states that the engagement is positively related to business outcomes and organizations such as job satisfaction, productivity, profits, and income, and negatively related to the desire to get out of the organization. The results of this study also indicate that the engagement of particular dimension of vigor and dedication effect on learning satisfaction. Employees engaged will experience unpleasant emotional condition at work that shows a high level of satisfaction. This is consistent with research of Biswas and Bhatnagar (2013) who confirmed it. However, the influence of vigor to engagement on learning satisfaction is significantly negative, while the influence of dedication or struggle to engagement on learning satisfaction is significantly positive. This is consistent with the results research of Saks (2006).

Furthermore, the results of this study also indicate that engagement mediates the relationship between personality and internal communication as independent variables and learning satisfaction as dependent variable. This is consistent with the results research of Macey and Schneider (2008) which states that the engagement mediated the relationship between antecedents (job characteristics, leadership, and personality) and the results of the work (task performance and contextual performance). Therefore, Bakker and Leiter claimed that engagement is actually a psychological condition that mediates the antecedents and outcomes of such engagement (Bakker 2011). Engagement is expected to mediate the relationship between antecedents and consequences. Strong and rational theory in explaining involvement is Social Exchange Theory which states that the relationship between individuals based on reciprocal independence in the presence of trust, loyalty, and mutual commitment (Cropanzano, Mitchell 2005). When individuals receive economic resources and socioemotional of the organization, they will feel a responsibility to respond and pay back to the organization through his engagement in the organization. This condition does not fully exist in student engagement on campus. In general, students are engaged because there are clear information and communication and they do have an extraversion personality and was always active in the social environment. Therefore, in line with the opinion of Kahn (1990) which stated that engagement is generally based on economic and social considerations. Therefore, because both of these considerations are not on the students, conscientious personality has no significant effect on engagement in the academic process. The students felt he had to pay school fees, then you have in plan formulation goal is to enable students are able to complete their studies on time.

5. Conclusions

Human capital is an important asset in the effort and performance that can determine the success of an organization. Therefore, it is important to understand the factors that influence the behavior of the individual. In Theory of Organizational Behavior, both situational and personal factors are antecedents that can explain the behavior of individuals in the workplace. Engagement showed positive psychological condition of the individual, so that the individuals involved have the spirit, enjoy the work or task, and have an effective relationship with the work or duties (Kahn 1990; Macey, Schneider 2008). Although contextual employee engagement is the same thing with the engagement of students, but in fact setting the job or task, the objectives to be achieved, and the values that affect organizational would make relations with the antecedents and consequences are different.

The weakness of this study is the use of cross-sectional data for testing the influence of the independent variables and the dependent variable along with mediator variable not very precise. Mediation model is a longitudinal model (MacKinnon *et al.* 2012). However, in practice, mediation tests can be done by using cross-sectional data. In practice, testing mediation models often use the preferred method for the evaluation of the mediation process, which uses cross-sectional data are available. This study also used a sample in small quantities and carried in undergraduate students in Yogyakarta, Indonesia, so it can not be generalized. Generalizing the results of this research will be done when many researchers to test models of the same relationship in various universities. The results found in this study should be regarded as tentative and require further testing before generalizations can be made. More empirical research is needed to validate the results and conclusions of this study. A larger sample size would make a better result. Longitudinal research design that will measure personality, internal communication, student engagement and learning satisfaction more than one point in time is also important to clarify their relationship.

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