

TEACHING METHOD AND ASSIMILATION OF STUDENTS IN TERTIARY INSTITUTIONS: A STUDY OF COVENANT UNIVERSITY, NIGERIA

M. Duruji, D. Azuh, J. Segun, I.P. Olanrewaju, U. Okorie

Covenant University (NIGERIA)

Abstract

The choice of teaching method which is the general principles, pedagogy and management strategies used for classroom instruction is very important to degree of assimilation by the recipient of teaching. Teaching theories primarily fall into two categories or “approaches” teacher-centered and student-centered. In the former, teachers are the main authority figure in this model. Students are viewed as empty vessels whose primary role is to passively receive information (via lectures and direct instruction) with an end goal of testing and assessment.

However in a student-centered approach, teachers and students play an equally active role in the learning process. The teacher’s primary role is to coach and facilitate student learning and overall comprehension of material. Student learning is measured through both formal and informal forms of assessment, including group projects, student portfolios, and class participation. The main aim of this paper is to examine the relationship between teaching method and assimilation of students and the impact on examination performance. A sample of 300 students cutting across the various schools and colleges in Covenant University who have taken at least not less than two semesters examinations was used for the study. Student-Lecturer relationship, examination contents, students’ mode of study and assimilation, effort and students’ CGPA were the parameters used for this purpose.

Keywords: Teaching Method, Assimilation, Tertiary Institution, Covenant University, Nigeria.

1 INTRODUCTIONS

Teaching is the art of unleashing the potentials that are inherent in the recipient, so as to draw out knowledge from the student (Jones 1980). The ability to do this involves making a choice of the most appropriate pedagogical strategy that would ensure optimal assimilation of the instructive materials from the giver. Studies have of course shown that the degree of assimilation of students correlates to the method of instruction (Tennyson, Botwill and Frey 1978, Gardner 1991). Though two main approaches to teaching; the teacher-centered and student-centered have dominated interaction in classrooms and captures the various methods that students can learn, the important decimal in whatever method of passing knowledge is assimilation by the recipient (Pascarella 1980). This can of course be measured either through formal and informal methods of assessment.

Covenant University, a faith-based institution was founded in 2002 to propagate a departure philosophy of life applicable learning that would culminate in the raising of new generation of leaders and contributors. It is based on the above that a drive and commitment to pioneering excellence at the cutting edge of learning is emphasized and attention is given to lecture system that impacts positively on the receivers (Tuckman 1996). This makes it an appropriate location to conduct a study of this nature that examines the relationship between teaching method and assimilation.

2 CONCEPTUAL CLARIFICATIONS

2.1 Teaching Method

Teaching has been variously seen as the art of instilling a sense of curiosity about one’s world and in enhancing the skills necessary to perpetuate this curiosity. But Skinner (1968) sees teaching as an arrangement of contingencies of reinforcement. However, Eble (1988) defines teaching as the presence of mind and person and body in relation to another mind and person and body, a complex array of mental, spiritual and physical acts affecting others. Brookfield (1986) supports this characterization of the interactive nature of teaching by describing it as essentially a transactional encounter in which learners and teachers are engaged in a continual process of negotiation of

priorities, methods, and evaluative criteria. Locke (1693) also speaks of teaching in terms of learner curiosity, and admonishes teachers to be particularly careful not to damage or inhibit its development.

Pertinent in teaching and learning is the ability to apply skills to the art of teaching with an aim to motivate the learners (Butler 1983). A blend of skills and art in teaching is also manifested in clearly structured lessons and manner of its presentation. Teaching method can therefore be seen as the active learning guidelines that discuss the benefits of active learning, as well as providing guidelines and sample activities that facilitate active learning (Yin 2003).

2.1.1 Direct Instruction

The direct instruction relies on explicit teaching through lectures and teacher-led demonstrations. Direct instruction is the primary teaching strategy under the teacher-centered approach, in that teachers are the sole supplier of knowledge and information. Direct instruction is effective in teaching basic and fundamental skills across all content areas. This comes under two broad categories;

2.1.2 Inquiry-Based Learning

Inquiry-based learning focuses on student investigation and hands-on learning. Here the teacher's primary role is that of a facilitator, providing guidance and support for students through the learning process. Inquiry-based learning falls under the student-centred approach, in that students play active and participatory role in their own learning process.

2.1.3 Cooperative Learning

Cooperative Learning emphasizes group work and a strong sense of community. Cooperative model fosters students' academic and social growth and includes teaching techniques such as reciprocal teaching. It falls under the student-centred approach because learners are placed in responsibility of their learning and development. This method focuses on the belief that students learn best when working with and learning from their peers. The most productive collaborations involve a fair division of labour and relevant and complex projects that cannot be completed by an individual working alone which implies that this approach requires interdependence.

2.2 Students Assimilation

When we talk about assimilation, we refer to such building blocks that centre on how learning is organized. Piaget (1970) sees it as a cognitive process that describes how new information are taken in and incorporated into existing knowledge. Piaget (1970) employed the term schema in his explanation of how information is organized. Schema here is the category of knowledge that is currently held. This helps the individual to understand the world and provides basic guidance for future events. The process of assimilation occurs when new information is added to an existing schema so as to understand the world. This process can lead to modification of existing knowledge so as to absorb the new information.

2.3 Concept of Tertiary Education

Education at the tertiary level is founded on the quest for discovery and scholarly excellence arising from the Greco-Roman vision that all citizens could engage in the investigation of higher level thinking as well as more remote ideals that were not obtainable in the ordinary utilitarian lives. These reflected in the actions of ancient Greek philosophers who removed the 'groves of academe' in the foundation of their higher institution of learning from mainstream education and, consequently, from such mundane realities as accountability (Clinchy, 1994). That earliest foundation has ensured that the gulf between tertiary institutions and other lower levels of learning has transcended that original physical isolation to one of perceived intellectual and ethical superiority. This translated to a kind of education that dealt less with workday realities and more with abstraction and theory that over the years has resulted in a closed and highly traditional society that seem resistant to external changes.

Vital areas of tertiary education system are teaching, research and community service. The most damaging incongruence of function in tertiary education system is the conflict between two components of a lecturer's job: between teaching and researching. This distinction gives rise to particular practices, reward systems, and clichéd arguments of the value/importance of one, the other, or teaching aspect of lectureship that is currently experiencing an insurgence of attention and innovation (Svinicki 1990). But good teaching remain vital given the fact that it is crucial in the transfer of knowledge and as noted by Lewis and Duffy (1996: 641) effectiveness and inspiration in teaching

are, in fact, “in vogue,” thus implying that the use of multiple teaching methodologies at the tertiary level may come to be seen as not just a pleasant diversion for students and instructors, but a necessity in optimizing the student learning that some ancient Greek philosophers have sought.

3 BRIEF OVERVIEW OF COVENANT UNIVERSITY

Covenant University is a Christian Mission University founded in 2002 on a departure philosophy to raise a new generation of leaders in all fields of Human endeavour. The University is a part of the Liberation Commission of the Living Faith Church under the leadership of Bishop David Oyedepo. The University is a growing, dynamic vision-birther, vision driven University, founded on a Christian mission ethos and committed to pioneering excellence at the cutting edge of learning. The University is driven by the compelling vision of raising a new generation of Leaders for the African Continent on the platform of a Holistic, Human Development and integrated learning curriculum, in order to raise Total Men who will go out to develop their world. Our Core-Values of Spirituality, Possibility Mentality, Capacity Building, Integrity, Responsibility, Diligence and Sacrifice are what defines our commitment to excellence. For over ten years of its establishment, the University has remained at the top, severally ranked as the best private university in Nigeria and one of the best in the country in spite of its short history.

There are two colleges in the University; the College of Development Studies (CDS), the College of Science and Technology (CST) and a School of Postgraduate Studies. Each of the Colleges comprises three schools; for CDS, the School of Business, School of Social Sciences and School of Human Development, whereas for CST there are also three schools, Environmental Sciences, Natural Sciences and Engineering. Together there are sixteen departments with about twenty-two independent programmes accredited by the National University Commission.

Currently the University has a population of 7,178 students comprising of 6,978 undergraduates and 220 postgraduate.

The University is instituting a learning context that is rich in educational opportunities, research and scholarship with a vision to build a world-class university that will be a pride of Africa as well as take its place among the Ivory league Universities on the global platform. The objective is to revolutionize the educational landscape of Africa. To this effect, the University has integrated fundamental requirements stipulated by academic and professional quality assurance bodies and with a global-outlook and impact driven learning emphasis, a powerful synergy for empowerment in enabling the inculcation of intellectual and creative abilities via a platform of a solid commitment to self-discovery are ensured through a learning environment equipped with ICT infrastructure across the lecture halls, theatres and laboratories and workshops.

4 RESEARCH OBJECTIVES, QUESTIONS AND HYPOTHESIS

4.1 Research Questions

1. Does combination of teaching methods enhance better performance of students in examinations?
2. Does the active roles played by lecturer and students have significant effect on learning process?
3. Do participation of students' in the teaching process enhance better assimilation?
4. Do students who study in group perform better than those who study alone?

4.2 Research Objectives

1. To find out the influence of combination of teaching methods on students' performance.
2. To find out whether active roles by lecturer and students have significant effect on learning process
3. To probe whether interactive lectures where students participate significantly enhance better assimilation.
4. To examine whether students who study in groups do better than students who study alone.

4.3 Research Hypotheses

1. There is a strong relationship between combination of teaching methods and students' performance.
2. Active role played by lecturer and students do enhance learning process
3. Interactive lectures where students participate significantly enhance better assimilation.
4. There is a strong relationship between whether students study in group or alone and their performance.

5 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

5.1 Literature Review

Teaching technique of any subject has bearing on the understanding of that subject. In most cases the resultant performances of students reflect the methods of teaching employed. Teaching methods in Sub-Saharan African is poor, perhaps because the region is still backward in terms of technological development or yet to attain economic growth. In fact students' aptitude is enhanced by the teaching methods employed by teachers. Teaching method which employs demonstration of instructional materials or equipment will culminate in better understanding of the objective of the course. In a study on the effect of teaching method, choice of discipline and student-lecturer relationship on academic performance, it was found among others that while 46% of female students reported rushed lectures, 29.69% of male reported lack of access to learning facilities such as internet as reasons for their low performance (Adeyele and Yusuff 2012). The use of demonstration as an asserted method for teaching tasks in vocational technical education has been recommended because it enhances both psychomotor and cognitive skills (Okoro 1998). In another study, Ogwo and Oranu (2006) affirm that demonstration method is the most widely used instructional method for acquisition of practical skills as it involves verbal and practical illustration. They added that the method is highly effective because it involves active participation of the student. A times, lack of sound teaching method leads to poor discourse, making the subject matter difficult and very technical for assimilation. Recently, Asuquo (2005) explains that project method is one of the most effective instructional methods which enhances students' participation and quick assimilation of skills in vocational and technical education. In furtherance to the above assertion, Ogwu (2005) posits that there is not one best approach to instruction. He added that any suitable instructional method should have the ability to hold the students interest and attention until the lesson is over. However, good teaching method along with instructional materials enhances comprehension, retention and recall. Many authors believed that small group and experiential teaching methods are good because it invoke a climate of respect and connectedness which are key contributors to effective learning (Greenhalgh et al, 2006; Nakata et al., 2008; Maroulis and Gomez, 2008).

The discussion teaching method is a design that provides opportunity for discussion between teacher and students, and students to students. It is a strategy that centres on shared conversations, discussions, and exchange of ideas in class. It gives opportunity for all to sit and listen, as well as talk and think, thus emphasizing the process of "coming to know" as valuable as "knowing the right answer".

Bennett (1995) argues that cooperative learning improves both academic achievement and students' interpersonal relationship. To him students no matter their level of achievement tend to benefit from cooperative learning and team work. This view was supported by Johnson, Johnson and Holube (1988) who asserted that cooperative spirit in learning help students work together to complete a task successfully as well as in promoting students' independence. Johnson and Johnson (1987) have also suggested that such interactions in the classroom that promote cooperative learning are successful strategy for reducing stereotyping and social rejection across disability, race and gender lines because they see themselves as members of a group as they participate in discussions. For Sadker et al (1991), allocating adequate time to academic content is not enough. To them, it is the teacher's ability to effectively use allocated time in classroom teaching that is the real key to student achievement. It is on this score that Berliner (1984) looks at academic time as three major parts. The amount of time a teacher schedules for a topic or subject, the engaged time in which students spend in active involvement listening to lesson taught, participation in class discussions, question sessions, writing etc and the academic learning time. In support of this view, Good and Brophy (1994) posits that the more

the engaged time spent within the allocated time, the better students' achievement similarly Berliner (1984) argues that engaged time ends up with a high success rate.

It is no longer in doubt that appropriate instructional strategies portray good teaching techniques and successful learning. According to Akerele and Afolabi (2012) the use of instructional materials in teaching process provides the basis for improved teaching and learning of a subject. Similarly way back in the 1990s, Ayinde (1999) opined that an intelligent use of audio-visual aids will save time, stimulate students' understanding and retention of knowledge. While Alaku (1998) stated that teachers' effectiveness depends on his use of appropriate instructional strategies and audiovisual aids, Kindler (2006) as quoted by Fakunle (2008) declared that people generally remember 10% of what they read, 20% of what they hear, 30% of what they see, 50% of what they hear and see, 70% of what they say and 90% of what they say as they do a thing. According to Baldacchino and Farrugia (2002), the quality of education cannot be seen or improved by simply providing physical resources like books, extending the duration of learning, training more teachers and providing other learning resources, but by teachers interpreting the learning to the pupils and appropriately using teaching and learning approaches. It is the teacher who has to establish the right climate for learning, use learning resources and appropriate teaching methods to attainment of students' greatness (Baikie, 2000). Onwuakpa and Nweka (2000) expressed that for a teacher to achieve the essence of teaching there is need to give assignments, projects and tests to their pupils and discuss the results with them. In Uganda, Opolot-Okurut et al. (2008) observed that factors that hinder pupils' opportunities to learn are teacher-related factors, which include: poor teaching methods, lack of teaching experience, teachers' weak academic background, poor teacher attitudes and lack of a continuous professional development. The learner, according to Von Glaserfeld (1998), should be actively involved in the learning process, not the traditional method where the instructor is to teach and the learner play a passive, receptive role.

5.2 Theoretical Frameworks

The study of this paper was based on the learning theories and teaching methods of noteworthy scholars such as Vygotsky (1978), Wood (1998), Piaget (1959 & 1967) and Jonassen (1999). All talked about social constructivism. Social constructivist scholars view learning as an active process where learners should learn to discover principles, concepts and facts for themselves. Whereas teachers are seen as facilitators who see that learners create value to what they are doing through creative display of teaching skills or methodologies. According to Piaget, when individuals assimilate, they incorporate the new experience into an already existing framework without changing that framework. According to Jonassen (1999), constructivism is a synthesis of multiple theories diffused into one form. It is the assimilation of both behaviorists and cognitive ideals. The constructivist stance maintains that learning is a process of constructing meaning; it is how people make sense of their experience. In fact, constructivist theorists have extended the traditional focus on individual learning to address collaborative and social dimensions of learning. Jonassen (1999) further observes that constructivism is a learning theory that gives teachers another perspective to rethink how students learn and to focus on process and provide ways of documenting change and transformation. It also reminds teachers to look for different ways to engage individual student, develop rich environments for exploration, and prepare coherent problem sets and challenges that focus on the model building effort, and elicit and communicate student perceptions and interpretations.

6 METHODOLOGY

Data for this paper was derived from a survey of 300 undergraduate students of Covenant University cutting across the various schools and colleges and departments in the University who have taken at least not less than two semesters examinations. Stratified sampling method was used in the selection of number of respondents across the various departments but the questionnaire was deployed at random at the departmental level during the University Omega (second) Semester examination to ensure that every department was captured in the distribution of questionnaires. Documented materials from the University Centre for Systems and Information Services were also sought to obtain information on enrolment statistics, graduation statistics as well as demographic distribution of current student population on campus. Data from the University handbook and other documents including books, journals and internet materials were also used for gathering necessary data that are important for this study. Bivariate and multivariate linear regression involving ANOVA analytical technique was applied in the analysis of all the data generated through the questionnaire, whereas descriptive analysis was used to analyse from the other methods of data gathering.

7 ANALYSIS AND DISCUSSION OF RESULT

7.1 Impact of Teaching Method on Students performance. Hypothesis one

H₁; Using a combination of teaching methods by lecturer helps students to perform better in examination

Table1.1 Coefficients

Model		Standardized Coefficients	t	Sig.
		Beta		
1	(Constant)		10.177	.000
	Making lecture materials available in advance enhances students performance	.211	3.359	.001
	Involving students in teaching some of the topics enhances students assimilation	.159	2.528	.012

Analysis of the ANOVA (table 1.1 appendix) result above indicates the overall statistical significance of the model (F-stat = 13.014) is within the acceptance region of 1 percent significance level. The above empirical result from the regression estimate provides significant statistical support confirming the evidence that deploying a combination of teaching methods by lecturer helps student perform better in examination. Specifically, the results confirms that making lecture materials available in advance enhances students performing and accounts for 21.1 percent of the effect of teaching method on student performance. Furthermore, involving students in teaching some of the topics to enhance students' assimilation was statistically significant at 1 percent and positively related to combination of teaching method to help students perform better. In magnitude the involvement of students in teaching some of the topics significantly captures over 15 percent of the impact of teaching method on student's performance.

7.2 The role of active participation in the learning process. Hypothesis Two

H₁; Active role played by lecturer and students do enhance learning process

Table1.2 Coefficients

Model		Standardized Coefficients	t	Sig.
		Beta		
1	(Constant)		9.941	.000
	Making lecture materials available in advance enhances students performance	.251	4.184	.000
	Involving students in teaching some of the topics enhances students assimilation	.263	4.387	.000

Table 1.2 above provides statistical evidence on the effect of active participation of both students and lecturers in the learning process. The estimated ANOVA result (see appendix), given F-value of 27.32 attest to the statistical reliability of the empirical result at 1 percent level of significance. A closer observation of the coefficients estimates (table1.2) indicates a significant direct impact of the active

role that should be played by both lecturers and student in the learning process. Particularly analysis of the result indicates that making lecture materials available in advance could enhance students' performance by 25.1 percent, *ceteris paribus*. The empirical evidence from the analysis shows that involving students in teaching some of the topics enhances student assimilation by over 26 percent when evaluated at the significance level of 1 percent for both results.

7.3 Effect of teaching skill on students' performance. Hypothesis Three

H₁: Interactive lectures where both lecturers and students participate significantly boost student performance.

Table1.3 Coefficients

Model	Standardized Coefficients	t	Sig.
	Beta		
1 (Constant)		13.858	.000
Teaching facilitated through Class room discussion can help students to assimilate better	.226	3.730	.000

The analysis of the result in table 1.3 establishes the relationship between interactive lectures where both lecturers and students participate equally and student performance. Considering the result of the F- test (13.91) at 1 percent level of significance (appendix), we could conclude that the estimated result is statistically relevant and thus significantly different from zero. A critical investigation of the hypothesis stated above provides evidence that teaching facilitated through class room discussion can help student to assimilate better. The result further implies that interactive lectures where both lecturers and students participate equally could boost students performance by 22.6 percent with the level of accuracy and error free ascertained at 1 percent level.

7.4 Impact of study group on student performance. Hypothesis Four

H₁: There exists a significant relationship between group study and student performance in schools.

Table1.4 Coefficients

Model	Standardized Coefficients	t	Sig.
	Beta		
1 (Constant)		12.325	.000
Students who study in groups do better than those who study alone	.217	3.579	.000

Analysis of the result on the relationship between students who study in group and assessment of student's performance as shown (table 1.4) above suggests a direct significant relationship between group study and better performance of students at 1 percent significance level. A critical analysis of the results shows that group studies enhance student better performance 21.7 percent holding other variables at constant. The statistical fitness of the entire result is supported by the result of the ANOVA F-statistic (12.81) which falls within the acceptable horizon of 1 percent level of significance (see appendix 1).

8 CONCLUSION

The impact of teaching method on students' assimilation capacity cannot be over emphasized. The teacher, who is an active constructor of learning, transmits knowledge. But to do this effectively, the teacher must be innovative which makes choice of teaching method vital. However in as much as various teacher brings in various styles of teaching, the recipient of these teaching remain important in determining the most effective teaching and learning style. Covenant University given its philosophical foundation of establishing a new generation leaders has gone a long way to provide environment to encourage impactful teaching and proven suitable for a study of this nature. Given the result of the survey, the view that the teacher should allow students voices to be heard as contributing members of class is reinforced. Put differently, the teacher teaches, asks questions, and hears his voice and at the same time appreciate the need to hear the voices of those he teaches. That is to say that more participatory teaching, stimulate imaginative and conceptual thinking amongst students and impacts positively in their performance.

It is therefore recommended that the classrooms should apply more discussion strategy to the teaching-learning process but in this process the teacher should plays the role of a manager, guide, initiator, referee and a summarizer.

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APPENDIX 1

Table 1.1a ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.636	2	4.818	13.014	.000 ^a
	Residual	95.149	257	.370		
	Total	104.785	259			

Table 1.2 ANOVA^b Result

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.070	2	8.535	27.319	.000 ^a
	Residual	80.295	257	.312		
	Total	97.365	259			

Table 1.3 ANOVA^b Result

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.864	1	4.864	13.912	.000 ^a
	Residual	90.198	258	.350		
	Total	95.062	259			

Table 1.4 ANOVA^b Result

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.477	1	13.477	12.806	.000 ^a
	Residual	271.519	258	1.052		
	Total	284.996	259			

APPENDIX 2

Questionnaire- on Teaching Methods and Assimilation of Students in Tertiary Institutions: Covenant University

Section A: Personal Bio-data

- Gender: i. Male () 2. Female ()
- Age: (i) >16, (ii) 17-18 (iii) 19-21 (iv) 22 and above
- College i. CDS () ii. CST ()

4. School (i) School of Social Sciences (ii) School of Business (iii) School of Human Development (iv) School of Engineering (v) School of Natural Science (vi) School of Environmental Sciences
5. Department
6. Programme.....
7. Level (i) 200 L (II) 300 L (III) 400 (IV) 500
Section B: Teaching Method(s) and Assimilation
8. Teaching Facilitated through Class room discussions can help students to assimilate better (i) strongly agree (ii) agree (iii) undecided (iv) disagree (v) strongly disagree
9. Teaching facilitated through demonstrations can help students to assimilate better
Strongly agree (ii) agree (iii) undecided (iv) disagree (v) strongly disagree
10. Lecture-centered teaching through lectures and direct instructions enhances your assimilation (i) strongly agree (ii) agree (iii) undecided (iv) disagree (v) strongly disagree
11. Student-centered teaching through group work and class participation enhances assimilation (i) strongly agree (ii) agree (iii) undecided (iv) disagree (v) strongly disagree
12. Assessment of students at the end of semester leads to better performance (i) strongly agree (ii) agree (iii) undecided (iv) disagree (v) strongly disagree
13. Assessment of students based on group interaction and class participation leads to better CGPA (i) strongly agree (ii) agree (iii) undecided (iv) disagree (v) strongly disagree
14. Students perform well when they just sit down and listen to teachers (i) strongly agree (ii) agree (iii) undecided (iv) disagree (v) strongly disagree
15. Students who study alone end up in good CGPA (i) strongly agree (ii) agree (iii) undecided (iv) disagree (v) strongly disagree
16. Students who study in groups do better than those who study alone (i) strongly agree (ii) agree (iii) undecided (iv) disagree (v) strongly disagree
17. Interactive lectures where both lecturers and students participate equally boost student performance (i) strongly agree (ii) agree (iii) undecided (iv) disagree (v) strongly disagree
18. Using a combination of teaching methods by lecturer helps students to perform better in examination (i) Strongly agree () ii. Agree () iii. Undecided () iv. Disagree () v. Strongly disagree ()
19. Making lecture materials available in advance enhances students performance (i) Strongly agree () ii. Agree () iii. Undecided () iv. Disagree () v. Strongly disagree ()
20. Involving students in teaching some of the topics enhances students assimilation (i) Strongly agree () ii. Agree () iii. Undecided () iv. Disagree () v. Strongly disagree ()
21. Lecturer and students should play active role in learning process (i) Strongly agree () ii. Agree () iii. Undecided () iv. Disagree () v. Strongly disagree ()
22. Use of multi-media and audio-visual materials during lectures accelerates students' assimilation (i) Strongly agree () ii. Agree () iii. Undecided () iv. Disagree () v. Strongly disagree ()