

**STUDY IMPLEMENTATION OF APPLICATION BASED
LEARNING (ABL) ON ACHIVEMENT AND LEARNING
MOTIVATION STUDENT AT COURSE REDOX
REACTION CLASS X SMAN 1 MLATI
ACADEMIC YEAR 2018/2019**

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ABSTRACT

The study has hypothesis determination of: (1) Difference in the application of learning approach between the Application Based Learning (ABL) approach and Theory Based Learning (TBL) approach to learner's achievement, (2) Difference in the application of learning between the Application Based Learning (ABL) approach and Theory Based Learning (TBL) approach to the motivation for teaching learners. The study is experimental using Quasi-Experimental Design with a Posttest Only with Nonequivalent Group Design. The population in the research is all students of class X at Senior High School 1 Mlati of 2018/2019, which is a total of 3 classes. The sample was used non probability sampling with a purposive sampling technique by 2 class. The methods of data collecting through test methods are objectively written tests for the learning achievement variable of knowledge realm and non-test methods with a questionnaire for the learning motivation variable. The data analysis technique has used Non-Parametric Test Mann-Whitney. Based on the research results it can be inferred: (1) There is no significant difference in the learning achievement of knowledge realm between the students following learning with Application Based Learning (ABL) approach and students who followed Theory Based Learning (TBL) to the reduction and oxidation matter, (2) There is no significant difference in the learning motivation between students following learning with Application Based Learning (ABL) and student who followed Theory Based Learning (TBL).

Key word: Application Based Learning (ABL), Learning Achievement, Motivation, Redox Reaction.

PENDAHULUAN

Pendidikan dapat mengembangkan kemampuan dan karakter manusia, namun tujuan pendidikan masih sulit dicapai di Indonesia karena pendidikan di Indonesia masih kurang maju (Sukasni dan Efendy, 2017). Keterbelakangan pendidikan di Indonesia dipengaruhi dua hal yang pertama yaitu kurikulum yang dianggap sebagai patokan dalam dunia pendidikan, sehingga banyak guru yang selalu mengejar selesainya materi untuk menyesuaikan dengan kurikulum tanpa

peduli seberapa dalam peserta didik memahami materi yang disampaikan oleh guru. Kedua pendidikan adalah proses belajar yang kurang menyenangkan (Sukasni dan Efendy, 2017). Berdasarkan hasil observasi di SMA N 1 Mlati diperoleh hasil bahwa proses pembelajaran yang dilakukan sudah baik, menekankan pada pemahaman teori dan aplikasi dari teori tersebut. Namun, masih terdapat sebagian kecil peserta didik masih kurang memperhatikan terutama pada mata pelajaran kimia, sehingga masih diperlukan upaya untuk terus meningkatkan kualitas kegiatan pembelajaran.

Kimia merupakan materi yang bersifat konsep struktural sehingga menuntut peserta didik untuk dapat memahami konsep-konsep struktural (Tsapalis., 2016). Materi yang digunakan dalam penelitian ini adalah materi reaksi redoks, reaksi redoks merupakan cabang ilmu kimia yang bersifat abstrak. Materi reaksi redoks memerlukan ketrampilan dalam memahami, menghafal, menghitung, dan menganalisis suatu reaksi (Purnamawati, dkk., 2014). Oleh karena itu, kimia harusnya disampaikan dengan metode yang lebih melibatkan penerapan aplikasi dalam proses belajar supaya peserta didik lebih mudah memahami materi yang dipelajari.

Berdasarkan uraian di atas dapat dilakukan kegiatan pembelajaran dengan menggunakan penerapan *Application Based Learning* (ABL) terhadap motivasi belajar dan prestasi belajar peserta didik. Adanya penerapan *Application Based Learning* (ABL) diharapkan mampu meningkatkan prestasi belajar dan motivasi belajar peserta didik.

DASAR TEORI

Application Based Learning adalah pembelajaran yang menerapkan aplikasi dalam kehidupan nyata dari suatu teori. Pendekatan *Application Based Learning* (ABL) berfokus pada ketrampilan berpikir, memecahkan masalah, refleksi, dan mengarahkan peserta didik untuk mengidentifikasi keadaan yang sebenarnya dan yang imajinatif (Hanson, 2008). Penerapan pendekatan ini memerlukan waktu yang lama supaya peserta didik dapat memahami materi yang diajarkan secara maksimal (Nagdeo, 2017).

Berdasarkan fokus dari pendekatan *Application Based Learning* (ABL), maka *Application Based Learning* (ABL) memiliki langkah-langkah pembelajaran sebagai berikut:

- 1) *Introduction*. Guru membagikan Lembar Kerja Peserta Didik (LKPD), kemudian peserta didik membaca Lembar Kerja Peserta Didik (LKPD).
- 2) *Auditory*. Peserta didik mendengarkan guru menjelaskan aplikasi suatu teori dan penjelasan mengenai teori tersebut,
- 3) *Discussion*. Guru memberikan permasalahan dan siswa berdiskusi kelompok untuk menyelesaikan permasalahan yang diberikan guru.
- 4) *Communication*. Peserta didik mempresentasikan hasil diskusi mereka didepan kelas.
- 5) *Evaluation and Quis*. Guru dan peserta didik mengulang materi yang telah dipelajari lalu peserta didik diberikan kuis.

Prestasi belajar memiliki aspek-aspek yang harus diperhatikan dan dicapai yaitu aspek pengetahuan, sikap, dan ketampilan. Pengetahuan berfokus pada

kemampuan berpikir untuk mengingat dan memecahkan masalah. Sikap merupakan aspek yang berhubungan dengan sikap dan nilai. Keterampilan merupakan aspek yang berhubungan dengan keterampilan berpikir atau yang melibatkan fisik (Nurhayati, dkk., 2013).

Motivasi belajar merupakan suatu yang merujuk pada kesediaan, dorongan, kebutuhan serta hasrat peserta didik yang berperan dalam keberhasilan proses pembelajaran (Feng, dkk., 2013). Motivasi belajar memiliki beberapa aspek yaitu aspek intrinsik yang memuat adanya hasrat dan keinginan untuk sukses dan berhasil, adanya dorongan dan kebutuhan dalam belajar, serta adanya harapan dan cita-cita masa depan. Aspek ekstrinsik motivasi belajar yaitu adanya penghargaan dalam kelompok, adanya keinginan yang menarik dalam belajar, serta adanya lingkungan yang kondusif (Sumantri, 2015).

METODE PENELITIAN

Penelitian ini merupakan penelitian eksperimen dengan *Quasi Experimental Design* yaitu *Posttest-Only Nonequivalent Control Group Design* untuk prestasi dan motivasi belajar. Desain ini menggunakan dua kelas yaitu kelas kontrol dan kelas eksperimen. Desain penelitian ini disajikan pada Tabel 3.1.

Tabel 3.1 Desain Penelitian pada Variabel Prestasi dan Motivasi Belajar

Kelompok	Perlakuan	Posttest
Eksperimen	X	Y ₂
Kontrol	-	Y ₂

Keterangan:

X : *Treatment* (Pendekatan *Application Based Learning*)

Y₂ : Kelas eksperimen dan kelas kontrol diberikan *posttest*

Variabel bebas merupakan variabel yang mempengaruhi atau menyebabkan adanya variabel terikat. Variabel bebas yang digunakan pada penelitian ini adalah pendekatan *Application Based Learning* (ABL). Variabel terikat merupakan variabel yang dipengaruhi oleh variabel bebas atau variabel yang timbul karena adanya variabel terikat. Variabel terikat pada penelitian ini adalah prestasi dan motivasi belajar.

Instrumen prestasi belajar dalam penelitian ini terdiri dari Silabus kelas kontrol dan eksperimen, Rencana Pelaksanaan Pembelajaran (RPP) kelas kontrol dan eksperimen, instrumen prestasi belajar ranah pengetahuan yang berjumlah 50 soal dan dilengkapi dengan kisi-kisi dan lembar jawab soal. Instrumen prestasi belajar ranah pengetahuan memuat soal-soal jenjang C1 (mengingat), C2 (memahami), C3 (penerapan), C4 (analisis). Instrumen pada variabel motivasi belajar berupa angket yang memuat pernyataan positif dan negatif dari setiap aspek motivasi belajar. Instrumen prestasi belajar ranah pengetahuan akan diuji validitas, reliabilitas, tingkat kesukaran, dan daya beda soal, sedangkan pada instrumen angket motivasi belajar akan diuji validitas, reliabilitas, dan kriteria dari masing-masing aspek. Uji validitas dari kedua instrumen diuji melalui dua langkah yaitu validasi isi yang dilakukan oleh dua panelis serta validasi konstruk.

HASIL DAN PEMBAHASAN

Hasil dari penelitian ini adalah data prestasi belajar ranah pengetahuan dan data motivasi belajar berupa angket. Deskripsi data hasil penelitian prestasi belajar ranah pengetahuan disajikan pada Tabel 4.1 dan data hasil penelitian motivasi belajar ditunjukkan pada Tabel 4.2. Hasil penelitian prestasi belajar ranah pengetahuan dan motivasi belajar dapat dilihat pada Lampiran 23.

Tabel 4.1 Data Hasil Prestasi Belajar Ranah Pengetahuan

Variabel	Kelas	Skor Maksimal	Skor Minimal	Rata-rata
Prestasi Belajar Ranah Pengetahuan	Eksperimen	94,44	38,89	65, 28
	Kontrol	83,33	33,33	69,79

Tabel 4.2 Data Angket Motivasi Belajar

Variabel	Kelas	Skor Maksimal	Skor Minimal	Rata-rata
Motivasi Belajar	Eksperimen	64	42	49, 19
	Kontrol	55	43	48, 19

Instrumen angket motivasi belajar ditentukan kriterianya berdasarkan aspek-aspek motivasi belajar. Data kriteria angkat motivasi belajar dapat dilihat pada Tabel 4.3.

Tabel 4.3 Kriteria Aspek Motivasi Belajar

Kelas	Kriteria Aspek				
	Adanya hasrat dan keinginan untuk sukses dan berhasil	Adanya dorongan dan kebutuhan dalam belajar	Adanya penghargaan dalam kelompok	Adanya kegiatan yang menarik dalam belajar	Adanya lingkungan yang kondusif
Eksperimen	Baik	Baik	Baik	Baik	Sangat Baik
Kontrol	Baik	Sangat Baik	Baik	Baik	Sangat Baik

Uji prasyarat dilakukan sebelum uji hipotesis, uji prasyarat yang dilakukan adalah uji normalitas dan uji homogenitas. Uji normalitas pada data prestasi belajar dilakukan pada data prestasi belajar ranah pengetahuan yang diperoleh dalam bentuk soal pilihan ganda. Uji normalitas pada data motivasi belajar peserta didik dilakukan berdasarkan data motivasi belajar yang diperoleh dalam bentuk angket. Tujuan dilakukan uji normalitas yaitu untuk mengetahui data yang telah diperoleh berdistribusi normal atau tidak.

Tabel 4.4 Hasil Uji Normalitas

Variabel	Kelas	Signifikansi	Keterangan
Prestasi Belajar Ranah Pengetahuan	Eksperimen	0,394	Normal
	Kontrol	0,000	Tidak Normal
Motivasi Belajar	Eksperimen	0,009	Tidak Normal

Variabel	Kelas	Signifikansi	Keterangan
	Kontrol	0,435	Normal

Uji homogenitas dilakukan untuk mengetahui data penelitian yang diperoleh homogen atau tidak.

Tabel 4.5 Hasil Uji Homogenitas

Variabel	Signifikansi	Keterangan
Prestasi Belajar Ranah Pengetahuan	0,070	Homogen
Motivasi Belajar	0,077	Homogen

Uji hipotesis dilakukan dengan tujuan untuk mengetahui perbedaan hasil belajar peserta didik antara proses pembelajaran dengan pendekatan *Application Based Learning* (ABL) dan proses pembelajaran dengan pendekatan *Theory Based Learning* (TBL). Uji hipotesis data prestasi belajar ranah pengetahuan dilakukan dengan uji Non-Parametrik dengan *Mann-Whitney* karena terdapat data yang tidak memenuhi uji prasyarat yaitu data tidak normal. Uji hipotesis motivasi belajar dilakukan dengan uji non-parametrik dengan *Mann-Whitney* karena data tidak memenuhi uji prasyarat yaitu data tidak normal.

Tabel 4.6 Hasil Uji Hipotesis

Hipotesis	Variabel	Signifikansi	Keterangan	
I	Prestasi Belajar Ranah Pengetahuan	0,074	H ₀ diterima	Tidak ada perbedaan
II	Motivasi Belajar	0,628	H ₀ diterima	Tidak ada perbedaan

1. Penerapan *Application Based Learning* (ABL) Terhadap Prestasi Belajar Ranah Pengetahuan

Penelitian ini menggunakan dua kelas yaitu X IPA 1 sebagai kelas kontrol dan X IPA 2 sebagai kelas eksperimen. Kelas X IPA 2 dipilih sebagai kelas eksperimen berdasarkan data hasil uji normalitas dan homogenitas pada nilai Ujian Tengan Semester (UTS) materi kimia. Data menunjukkan hasil yang normal dan homogen, kemudian kelas dipilih secara acak.

Berdasarkan kegiatan pembelajaran yang telah dilakukan oleh mahasiswa, diperoleh hasil penelitian yang menunjukkan hasil yang tidak sesuai dengan hasil observasi. Berdasarkan hasil pengujian menggunakan *Mann-Whitney* hasil uji hipotesis prestasi belajar ranah pengetahuan memiliki nilai signifikansi sebesar 0,074, artinya signifikansi $> 0,05$ sehingga H₀ diterima. Kesimpulannya adalah tidak terdapat perbedaan yang signifikan antara peserta didik yang mengikuti pembelajaran dengan pendekatan *Application Based Learning* (ABL) dan peserta didik yang mengikuti pembelajaran dengan pendekatan *Theory Based Learning* (TBL) terhadap prestasi belajar ranah pengetahuan pada materi reaksi reduksi dan oksidasi.

Data hasil penelitian prestasi belajar ranah pengetahuan menunjukkan bahwa untuk kelas eksperimen memiliki skor maksimal 94,44, skor minimal 38,89 dan rata-rata kelas 65, 28. Kelas kontrol memiliki skor maksimal 83,33, skor minimal 33,33 dan rata-rata kelas 69,79. Hasil tersebut menunjukkan bahwa kelas kontrol

memiliki nilai rata-rata yang lebih tinggi dari kelas eksperimen. Artinya penerapan *Application Based Learning* (ABL) tidak berhasil diterapkan pada kelas eksperimen.

Ketidakberhasilan tersebut disebabkan dengan berbagai faktor, salah satunya karena kurangnya media penyampaian aplikasi dari reaksi redoks yang disampaikan, karena mahasiswa hanya menggunakan Lembar Kerja Peserta Didik (LKPD) aplikasi reaksi redoks. Hal lain yang menyebabkan hasil penelitian yang tidak sesuai adalah peserta didik pada kelas eksperimen rata-rata tidak suka mencatat, sedangkan kelas kontrol selalu mencatat ketika proses pembelajaran berlangsung.

2. Penerapan *Application Based Learning* (ABL) Terhadap Motivasi Belajar

Berdasarkan hasil pengujian menggunakan uji *Mann-Whitney* memiliki nilai signifikansi 0,628 artinya nilai signifikansi $< 0,05$, sehingga H_0 diterima. Kesimpulannya tidak terdapat perbedaan yang signifikan antara peserta didik yang mengikuti pembelajaran dengan pendekatan *Application Based Learning* (ABL) dan peserta didik yang mengikuti pembelajaran dengan pendekatan *Theory Based Learning* (TBL) terhadap motivasi belajar peserta didik.

Data penelitian angket motivasi belajar untuk kelas eksperimen menunjukkan skor maksimal 64, skor minimal 42, dan rata-rata kelas 49,19. Kelas kontrol menunjukkan skor maksimal 55, skor minimal 43, dan rata-rata kelas 48,19. Hasil tersebut menunjukkan bahwa tidak ada perbedaan yang signifikan antara dua kelas.

Perbedaan yang tidak signifikan tersebut terjadi karena masing-masing kelas memiliki keunggulan dalam aspek motivasi belajar tertentu. Berdasarkan Gambar 4.1 pada kelas eksperimen dan kontrol diperoleh persentase rata-rata sebesar 77%. Hasil penentuan kriteria masing-masing aspek pada kelas eksperimen memperoleh kriteria baik pada aspek adanya hasrat dan keinginan untuk sukses dan berhasil, adanya dorongan dan kebutuhan dalam belajar, adanya penghargaan dalam kelompok, dan adanya kegiatan yang menarik dalam belajar, serta kriteria sangat baik untuk aspek adanya lingkungan yang kondusif. Kelas kontrol mendapatkan kriteria baik untuk aspek adanya hasrat dan keinginan untuk sukses dan berhasil, adanya penghargaan dalam kelompok, dan adanya kegiatan yang menarik dalam belajar, serta kriteria sangat baik untuk aspek adanya dorongan dan kebutuhan dalam belajar dan adanya lingkungan yang kondusif. Hal ini menunjukkan bahwa motivasi belajar dari kedua kelas sudah tinggi, sehingga hasil menunjukkan tidak terdapat perbedaan yang signifikan motivasi belajar antara kelas eksperimen dan kontrol.

KESIMPULAN

1. Tidak terdapat perbedaan yang signifikan antara peserta didik yang mengikuti pembelajaran dengan pendekatan *Application Based Learning* (ABL) dan peserta didik yang mengikuti pembelajaran dengan pendekatan *Theory Based Learning* (TBL) terhadap prestasi belajar ranah pengetahuan pada materi reaksi redoks.
2. Tidak terdapat perbedaan yang signifikan antara peserta didik yang mengikuti pembelajaran dengan pendekatan *Application Based Learning* (ABL) dan

peserta didik yang mengikuti pembelajaran dengan pendekatan *Theory Based Learning* (TBL) terhadap motivasi belajar.

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ABSTRACT

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Key word: Application Based Learning (ABL), Learning Achievement, Motivation, Redox Reaction.

PRELIMINARY

Education can develop skills and human character, but it is still difficult to achieve the goal of education in Indonesia for education in Indonesia is still underdeveloped (Sukasni and Efendy, 2017). The backwardness of education in Indonesia is influenced by two things first is the curriculum which is considered as a benchmark in the world of education, so many teachers are always pursuing the completion of the material to conform to the curriculum without matter how the students understand the material presented by the teacher. Both education is a learning process that is less fun (Sukasni and Efendy, 2017). Based on observations in SMA N 1 Mlati result that the learning process has been well done, emphasizes on understanding the theory and application of the theory. However, there is still a small fraction of students are still less attention mainly on the subjects of chemistry, so it is still necessary efforts to continuously improve the quality of learning activities.

Chemistry is a material that is a structural concept that requires learners to be able to understand the concepts of structural (Tsapalis., 2016). The material used in this study is a matter of redox reactions, redox reactions is a branch of chemistry that is abstract. Material of redox reactions require skill in understanding, memorization, counting and analyzing a reaction (Purnamawati, et al., 2014). Therefore, the chemical should be delivered with more methods involving the application of the application in the learning process so that learners more easily understand the material being studied.

Based on the above can be done by using the application of learning activities *Application Based Learning* (ABL) on the learning motivation and learning achievements of learners. their application *Application Based Learning* (ABL) is expected to improve learning achievement and motivation of learners.

BASIC THEORY

Application Based Learning is learning that implementing real-life application of theory. Approach *Application Based Learning* (ABL) focuses on thinking skills, problem solving, reflection, and direct learners to identify the actual condition and imaginative (Hanson, 2008). The application of this approach requires a long time so that the students can understand the material being taught to the maximum (Nagdeo, 2017). Focus of approach *Application Based Learning* (ABL), then *Application Based Learning* (ABL) has a learning steps as follows:

- 1) *Introduction*. Teacher gives Worksheet Students then learners read Worksheet Students
- 2) *Auditory*. Learners listen to teachers explain the application of a theory and an explanation of the theory,
- 3) *Discussion*. Teachers give students discussed the issues and groups to solve the teacher.
- 4) *Communication*. Learners present the results of their discussion in front class.

5) *Evaluation and Quis*. Teachers and learners to repeat material that has been Learning and learners are given a quiz.

The learning achievement has aspects that must be considered and achieved by aspects of knowledge, attitude, and appearance. Knowledge focuses on the ability to think to remember and solve problems. Attitudes are aspects related to attitudes and values. Skills are the aspects related to thinking skills or involving physical (Nurhayati, et al., 2013).

Motivation to learn is one that refers to the willingness, encouragement, needs and desires of students who play a role in the success of the learning process (Feng et al., 2013). Motivation to learn has several aspects: the intrinsic load their passion and desire to succeed and succeed, the urge and need to learn, as well as their hopes and ideals of the future. Aspects of extrinsic motivation to learn that their awards in the group, the desire of interest in learning, as well as the existence of a conducive environment (Sumantri, 2015).

RESEARCH METHODS

This study was an experimental study with *Quasi-Experimental Design* that is *Only Nonequivalent-posttest control group design* for achievement and motivation to learn. This design uses two classes that control class and experimental class. Design of this study are presented in Table 3.1.

Tabel 3.1 | Design and Research on Variable Achievement Learning Motivation

Group	Treatment	posttest
Experiment	X	Y ₂
Control	-	Y ₂

Notes:

X :Treatment (Approach *Application Based Learning*)

Y₂ :Class experimental and control classes given *posttest*

The independent variable is a variable that affects or causes the dependent variable. The independent variables were used in this study is the approach *Application Based Learning* (ABL). The dependent variable is a variable that is affected by the independent variable or variables that arise because of the dependent variable. The dependent variable in this study was the achievement and motivation to learn.

Instruments of learning achievement in this study consists of the control and experimental class syllabus, lesson plan control and experimental classes, learning achievement realm of knowledge instruments totaling 50 questions and is equipped with a grating and question answer sheet. Instruments of learning achievement realm of knowledge contains C1 level issues (remember), C2 (understand), C3 (application), C4 (analysis). Instruments on the variable of learning motivation questionnaire containing positive and negative statements of every aspect of motivation to learn. Instrument learning achievement realm of knowledge will be

tested for validity, reliability, level of difficulty, and about the different power, while the instrument of learning motivation questionnaire will be tested for validity, reliability, and criteria from each aspect. Test the validity of the instrument was tested through two steps, the content validation performed by the two panelists and construct validation.

RESULTS AND DISCUSSION

The results of this study are learning achievement data domain knowledge and data in the form of a questionnaire study motivation. Description of learning achievement survey data domain knowledge is presented in Table 4.1 and motivation to learn research data shown in Table 4.2.

Table 4.1 Data Sphere Knowledge Learning Achievement Results

variables	Class	Score	Score	Average
		Maximum	minimal	
Learning achievement	Experiment	94.44	38.89	65, 28
Knowledge sphere	Control	83.33	33.33	69.79

Tabel 4.2 Data Angket Motivasi Belajar

Variable	Class	Maximum Score	Minimum Score	Average
Motivation to learn	Experiment	64	42	49.19
	Conrol	55	43	48.19

Instruments learning motivation questionnaire on the terms specified criteria motivational aspects of learning. Data criteria for lifting the motivation to learn can be seen in Table 4.3.

Table 4.3 Criteria Aspects of Motivation

Class	Criteria Aspects				
	Their passion and desire to succeed and succeed.	The drive and the need to learn	Their awards in a group	The existence of interesting activities preformance learn	The existence of a conducive environment
Experiment	Well	Well	Well	Well	Very good
Control	Well	Very good	Well	Well	Very good

Prerequisite test performed prior to testing hypotheses, tests prerequisite to do is test for normality and homogeneity. Test for normality in learning achievement data carried on learning achievement available domain knowledge in the form of multiple choice questions. Data normality test on the motivation of learners' learning motivation conducted based on data obtained in the form of a questionnaire. The purpose is to determine the normality test data have been obtained normal distribution or not.

Table 4.4 Normality Test Results

Variable	Class	Significance	Information
Learning achievement knowledge sphere	Experiment	0,394	Normal
	Contol	0,000	Tidak Normal
Motivation to learn	Experiment	0,009	Tidak Normal
	Control	0,435	Normal

Homogeneity test was conducted to determine the research data obtained homogeneous or not.

Table 4.5 Results Homogeneity test

Variables	significance	Information
Knowledge Sphere Learning Achievement	.070	Homogeneous
Motivation to learn	0.077	Homogeneous

Hypothesis testing is done in order to determine the differences between the learning outcomes of students with a learning process approach *Application Based Learning (ABL)* and the learning process with *Theory Based Learning (TBL)* approach. Hypothesis test of learning achievement data realm of knowledge is done by non-parametric test with *Mann-Whitney* because there is data that does not meet the prerequisite test that the data is not normal. Learning motivation hypothesis test is done by non-parametric test *Mann-Whitney* because the data does not meet the prerequisite test that the data is abnormal.

Tabel 4.6 Hipotesis Test Result

Hipotesis	Variable	Significance	Information	
I	Learning achievement knowledge aphere	0,074	H ₀ accepted	No difference
II	Motivation to learn	0,628	H ₀ accepted	No difference

1. Application *Application Based Learning (ABL)* Against Learning Achievement Knowledge sphere

This study uses two classes of X IPA 1 as the control class and X IPA 2 as the experimental class. Class X IPA 2 was selected as the experimental class based on test data normality and homogeneity on the value of the Middle

Semester Exam (UTS) chemical materials. Data showed normal results and homogeneous, then randomly selected class.

Based learning activities that have been carried out by the students, the result of research that show the results that are inconsistent with the results of observation. Based on test results using *Mann-Whitney* results of hypothesis testing learning achievement realm of knowledge has a significance value of 0.074, meaning that the significance of > 0.05 so that H_0 be accepted. The conclusion was that there was no significant difference between the students who follow the teaching approach *Application Based Learning* (ABL) and learners who follow learning with *Based Learning Theory*(TBL) approach to the learning achievement in the material realm of knowledge reduction and oxidation reactions.

Data from the realm of science academic achievement research shows that for the experimental class has a maximum score of 94.44, a minimum score of 38.89 and an average class of 65, 28. In the control class has a maximum score of 83.33, a minimum score 33.33 and 69.79 grade average. These results show that the control class has an average value higher than the experimental class. This means that the application *Application Based Learning* (ABL) has not worked in the experimental class.

The failure was caused by various factors, one of them due to lack of media delivery applications of redox reactions are presented, because students only use Worksheet Students application of redox reactions. Another thing that led to the results of research that does not fit is the experimental class students on average do not like notes, while the control class is always noted when the learning process.

2. Application *Application Based Learning* (ABL) Motivation Study

Based on test results using the test *Mann-Whitney* have a significance value 0.628 means that the significance value < 0.05 , so that H_0 be accepted. In conclusion there is no significant difference between the students who follow the teaching approach *Application Based Learning* (ABL) and learners who follow the teaching approach *Theory Based Learning* (TBL) to motivate learners.

Learning motivation questionnaire research data for the experimental class showed a maximum score of 64, a score of at least 42, and the average grade 49.19. Control class indicates the maximum score of 55, a score of at least 43, and the average grade 48.19. These results showed that there was no significant difference between the two classes.

Significant differences occurred because each class has an advantage in certain aspects of learning motivation. Based on Figure 4.1 in the experimental class and gained control of the average percentage of 77%. The result of the determination criteria for each aspect of the experimental class acquire good criteria on aspects of their passion and desire to succeed and succeed, the urge and need to learn, their reward in the group, and their activities are interesting in learning, as

well as the criteria very well for aspects existence of a conducive environment. Control class get good criteria for aspects of their passion and desire to succeed and succeed, the rewards in the group, and their interest in the learning activities, as well as excellent criteria for aspects of the urge and the need to learn and the enabling environment. This suggests that the motivation to learn from both classes is high, so that the results showed no significant differences between the experimental class learning motivation and control.

CONCLUSION

1. There were no significant differences between the learners follow learning approach *Application Based Learning* (ABL) and learners who follow the teaching approach *Theory Based Learning* (TBL) to the learning achievement in the material realm of knowledge of redox reactions.
2. There were no significant differences between the learners follow learning approach *Application Based Learning* (ABL) and learners who follow the teaching approach *Theory Based Learning* (TBL) on motivation to learn

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