# CHAPTER II

# REVIEW OF RELATED LITERATURE

## A. Review of Related Literature

### a. Theoretical Framework

The literature in this chapter gives a brief explanation about some theories that will support this study. It deals with the theories related to students' perceptions, while the researcher decides this research covers three main areas: Explanation of *ProProfs* Assessment Software, Computer-based Assessment, and student's perceptions.

### 1. *ProProfs* Online Computer-based Assessment Software

*Proprofs* is a Knowledge Management Software for quizzes, tests, training, flashcards, and knowledge base. The software allows teachers to not only create online exams but also helps them in automatically grading test papers and managing the reports of students. *ProProfs* have variation of application to make questions.

> *"ProProfs* products, including Quiz, Survey, knowledge and training tools, are used by many Fortune 500 companies such as Sony and Dell, along with users from leading educational institute like Harvard and Yale.In *ProProfs* website more than one million pieces of content provided in about seventy languages; and it is online training and assessment or testing with the world's largest library of professional tests and quizzes."[1]

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[1]*"Online Computer Based Assessment Software Create tests with computer based assessment software."*, (http://www.proprofs.com/quiz-school/computer-based-assessment-software/, accessed on 24th March, 2016).

*ProProfs* was founded by Sammer Bhatia on the vision that knowledge should be freely available to people from all walks of life. Sameer and his team made *ProProfs* very easy to use. There are vast amount of options available when creating a tool online at *ProProfs*, yet it doesn't make things complicated for anybody to use. The user doesn't need to learn how to code or convert files. *ProProfs* Software is a leading quiz or test site, ideal for teachers or lecturers to create and deliver online assessments to learners.

The software comes with an intuitive and interactive interface and supports multiple question types such as checkboxes, fill-in-the-blanks, true or false, multiple choice, essay types and more. Creating a test is easy with *ProProfs*. There are millions of quiz templates on various topics which instructors can use to create their own assessments. The tests are automatically graded saving them time and effort. Lecturer can also award learners with custom test completion certificates. In addition to these benefits, *ProProfs* software is a fully hosted solution, which makes it possible for trainers, schools, universities, or large enterprises to access it 24/7 online from any browser, platform or mobile device. They can take full advantage of advanced options such as online quiz libraries (to select quiz questions from a wide range of educational topics). Using educational assessment software, teachers can easily create online quizzes, secure tests and assessments for

students. Teachers even receive detailed reports and statistics to analyze how their students have performed as well as identify knowledge gaps so they can assist learners accordingly.

a. *ProProfs* specifications

1) Intended Users

Freelancers, Large Enterprises, Mid Size Business, Non Profits, Public Administrations, Small Business.

2) Devices Supported

Linux, Mac, Windows, Web-based, Windows Phone.

3) Supported Countries

Asia, Australia, Canada, China, Europe, Germany, India, Japan, Latin America, Middle-East and Africa, United Kingdom, United States.

4) Supported Languages

Arabic, Chinese (Simplified), Chinese (Traditional), Czech, Danish, Dutch, English, Finnish, French, German, Hebrew, Hungarian, Indonesian, Irish, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Taiwanese, Thai, Turkish, Ukrainian.

5) Support Options

FAQs, Forum, Knowledge Base, Online Support, Phone Support, Video Tutorials.

6) Ranking in Categories

Number 57 in HR and Employee Management Software Training Software and Number 187 in IT Management Software Development Tools Software.

b. Key Features of *ProProfs* Quiz Maker

1) Create online quizzes

2) Full data portability – store, print, embed your quiz on websites

3) Create surveys, polls and flashcards

4) Supports multiple question types

5) Sell or buy quizzes - ecommerce integration

6) Add documents, PPTs, PDFs, videos, wikis, blogs etc

7) Track who took your quiz

8) Automated grading

9) Free quiz templates

10) Custom quiz completion certificates

11) Online classroom for learner management

12) Detailed quiz statistics

13) Exam stats & reports

14) Take exams anywhere anytime

c. How to Create a Quiz in *ProProfs* Online Quiz Maker.

These are the step to create

1) Go to the *ProProfs* homepage a Quiz in *ProProfs.*

http://www.proprofs.com/



**Figure 2.1**

**Home page of *ProProfs***

2) Then select either try it for free or sign up



**Figure 2.2**

**Sign up page of *ProProfs***

3) After completing the process above (depending on which option you choose, find Create a Quiz.

4) Select the type of Quiz you want to create. Most often it will be a scored Quiz.



**Figure 2.3**

**Quiz maker page**

5) Click Continue.

6) Click on Enter Quiz Title to name your Quiz.

7) Select the type of question you want to include and drag it onto the white canvas.

**Figure 2.4**

**Sign up page of *ProProfs***

8) Click on edit question (or Type Question Here). Enter your question information. Remember to indicate the correct answer.

9) In Edit mode, you can add an explanation and insert media files.

10) You can drag quiz questions up and down to reorder using the Cross Arrows.

11) When you are done, you can Preview your Quiz or click "Done".



**Figure 2.5**

**Preview quiz page of *ProProfs***

12) You will be taken to a screen that lists all the Quizzes you have created. The next step is to Edit Settings.



**Figure 2.6**

**List all the quizzes page of *ProProfs***

13) On this screen, you have the following options:

a) Assign points to the quiz or to each question (if you choose this option, you also need to click on Manage Point Assignment and assign points to each question – when you are done, click Save and Close Window).

b) Set a time limit.

c) Indicate how the results will show and a minimum passing score.

- pass/fail

- letter grade

- good or excellent

- customize

d) Order the questions – predetermined or stuff.

e) Select the number of questions for spooling.

f)  Select the number of questions per page.

g)  Add a Quiz header.

h)  Award a certificate based on student's score.

14) When you are done, you know have the option to Email, Link, Embed, or Print the Quiz.

15) This is the same screen you will go to see quiz reports and stats.

16) The results will show the student's name as Guest when using a free account. To get to the Quiz to see their name, click on the View link.



**Figure 2.7**

**List results page of *ProProfs***

17) To access your quiz once you have an account, click on Quizzes.

18) In this software certificate is provided, which students should download by clicking on the Print or Download Certificate link and go to File and Save As.

**Figure 2.8**

*ProProfs'* **certificate of achievement**

In summary, we need to sign up for account (the basic account is free). Then, we can create a quiz or test by following the step by step instructions above. Quiz or test can be shared on Facebook or Twitter, embedded on a website, emailed to people, or accessed via a URL. We can also print out the quizzes or the test. Once participants have completed a test, we can download the results, get instant grades for them, and issue certificates to successful completers. The Students can download the certificate directly after the end of the assessment. The certificate consists of the students' name, the score, the class, the date, and the lecturer name.

2. **ProProfs Mid-term Exam direction**



Classroom Management A and B

Mid-term Exam Directions

(Please read carefully and completely)

Go to link https://www.proprofs.com/quiz-school/story.php?title=mta3nzaxmw==qxit

Link active on    : Sunday, 3 May 2014, 07.00 - 08.30 (90 minutes)

Exam duration    : 60 minutes (There's a countdown timer on the top right corner of page)

Exam questions  : 40 multiple-choice items

1. The questions will be randomized (which means every student will get a different order of questions), and each question will be shown on one page (one page one question).
2. Fill in the first name using your first name, last name with your last name. If your name contains more than two words, use the first and the last name only. If your name contains only one word, type the name two times.
3. You must answer ALL the 40 questions. You cannot skip a question.
4. You can repeat the test if time allows. Click on "Try again" at the bottom of the end of the test. I will save your best score only.
5. The test will be available online on Sunday, 3 May 2014, 07.00 - 08.30 or 90 minutes. You cannot access it before and after that.
6. Each item will tell you its weight/point. If you answer all the 40 items correctly, your score will be a perfect 100:

| Weights of items | Total |
|---|---|
| 10 items @ 1 point | 10 points |
| 10 items @ 2 points | 20 points |
| 10 items @ 3 points | 30 points |
| 10 items @ 4 points | 40 points |
| *If all 40 items are answered correctly* | *100 points* |

7. There is no minus score for a wrong answer. Just go for it.
8. You have to finish the exams within 60 minutes. You can monitor your remaining time by looking at the little countdown timer at the top of the page.
9. There's no "Back" button. So, think carefully before answering. After all, 60 minutes is a very...very long time to do 40 items.
10. After submitting your answers, you will immediately know your score. You can download this score in the form of a certificate.
11. Any questions about this online exam should be directed to me through Edmodo in the forum.

Happy doing the test!

I wish you a good luck, bright people!

Albard Khan, M.Ed

**Figure 2.9**

*ProProfs'* **Mid-term Exam Directions**

Before the students did the Mid-term examination test, the lecturer given the Mid-term exam directions. The Mid-term exam directions explain how students did the exam, the point, also the detailed of the exam. The students have detailed information about the date, exam duration, the link active, exam question, each item point, and the way how the students did the examination.

**3. Computer-based assessment**

1. Definition of Computer-based Assessment

The definition of Computer-based Assessment according to Bull is any assessment activity which involves the use of computers.

> "E-assessment, online assessment, computer assisted or aided assessment; computerized assessment or computer based assessment is any assessment activity which involves the use of computers."[2]

Meanwhile, Computer-based assessment (CBA) describes one potential source of (diagnostic) assessment input.

> "Computer-based assessment (CBA) - describes one potential source of (diagnostic) assessment input. It also refers to the conceptualization and administration of tests using computers with software applications either commercial or open source."[3]

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[2]Bull, J, *Computer Assisted Assessment: Impact on Higher Education Institutions.* (Educational Technology & Society, 2(3), 1999), 123.

[3] John, Mulvaney, Thesis: *"Computer-based Assessment and the Effects it has on Middle School Aged Students"*. (The Graduate School University of Wisconsin-Stout, 2011), 11.

Computer-based Assessment is a broad term that can cover some different types of testing tools and technologies. One of the most common is online assessment, in which the creator uses online assessment creation software to develop a test. Then, the creator provides a link to the students, who take the test online. Any type of testing that involves the use of these technologies, as opposed to paper and pencils can be considered under the umbrella of Computer-based Assessment.

In addition, Computer based assessment definition at it is broadest, the definition of computer based assessment is this: "the use of digital tools for assessment-related activity." Notice the use of the term "digital tools" rather than "computers" this is because today computer based assessment can also be both created and taken using laptops, tablets, and even smartphones. Any type of testing that involves the use of these technologies, as opposed to paper and pencils can be considered under the umbrella of computer based assessment.[4]

2. Types of Computer-based Assessment:

Here are two of the most common types of Computer-based Assessment:

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[4] *"Online assessment software defining computer based assessment"* (http://wwwproprofs.com/c/ online-assessment-software/defining-computer-based-assessment/, accessed on 24th March, 2016)

a)  Assessment embedded within e-learning modules.

This type is most similar to the original computer based training. Here, online assessments are embedded within larger e-learning modules so that all of a student' learning activities take place on the computer. For example, a student might watch a video that has comprehension questions contained within it. Or, a student may complete a full e-learning module that culminates in a final test.

b)  Standalone online assessments.

This type is relatively new, and it is being used in all kinds of learning environments, including in-person courses. Here, an instructor uses an online assessment creator to develop quizzes and tests, which students then take using an online platform. Online assessments have many possible applications, from traditional chapter quizzes to final exams. They can also be used to boost student engagement and measure retention on an ongoing basis. For example, an educator could start every class with a short quiz that students take on their smartphones.[5]

In simply definition, CBA means the practice of giving quizzes and tests on the computer instead of using pencil and paper.

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[5]*"Online assessment software defining computer based assessment"* (http://wwwproprofs.com/c/ online-assessment-software/defining-computer-based-assessment/, accessed on 24th March, 2016)

3. Transition to Computer-based Assessment

> "Computer-based assessment is not a new idea. In fact, it has been around in some from since 1959, when the first computer based training (CBT) system was built."[6]

In other research also states that recent progresses which ones in computer and Web-based technology have advanced the state of the art and has transformed from traditional paper-and-pencil format to computerized and web-based format.

> "Analyzed the essential components of the computer-based assessment for students' problem solving capability, which included problem translation and integration as well as solution planning and execution."[7]

Web-based systems offer many novel features that cannot be implemented in the Paper-based systems, such as real-time data collection, management and analysis capability; individualized learning and teaching assessment; and distributed and interactive assessment. Finally, increased student numbers and decreased staff resources expedite the need to develop electronic learning and assessment methods for students and instructors.

> "Research findings revealed the necessity to incorporate different learning styles into the educational assessment in order for a more accurate and meaningful outcome to be achieved."[8]

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[6]Gomersall, *Practical implementation of e-testing on a large scale, and implications for future e-assessment and e-learning,* (2005).

[7] Baker, E. L., & Mayer, R. E, *Computer-based assessment of problem solving*, (Computers in Human Behavior, 15(9) (1999), 269.

[8] Ayre, & Nafalski, *"Recognizing diverse learning styles in teaching and assessment of electronic engineering."*, (Kansas City: Proceeding of IEEE 30th Frontiers in Education Conference, October 2000), 18.

In addition, the other research also state that CBA has been used in many discipline area.

> "Computer-based assessment has been used in many disciplines to give both formative feedback and to offer summative testing. This is especially so in the sciences. There is evidence to suggest that formative computer-based assessment can produce improvement in student learning outcomes and that this can lead to positive attitudes of students to learning."[9]

4. Benefits and Risks of Computer-based Assessments

The existence of CBA certainly arose both of advantages and disadvantages sides. Here are some advantages of Computer-based assessment:[10]

a) Greater precision in timing and delivery of test items, and measurement of perceptions.

This is particularly important where timing is critical. For example, in assessment of short-term memory but less so in the present study.

b) Standardised presentation.

The test is exactly the same for all recipients, whereas with human administration some variation is inevitable.

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[9]Clariana, *"Achievement predictors for a computer- applications module delivered via the world-wide web"*, (Journal of Information Systems Education, v11n1 (2000) 13.

[10] Chris Singleton, *"Computer-based assessment in education,"* (Department of Psychology, University of Hull, Educational and Child Psychology, (Special Issue on 'Information Technology and Children's Learning') Vol. 18, No. 3, 2001)

c) Savings in labour, time and cost.

CBA can reduce the costs associated with entering, collecting, aggregating, verifying, and analyzing data.

d) Increased motivation.

Students with special educational needs have been found to display negative perceptions to conventional tests given in pen-and-paper format or administered by a human assessor.

e) Development of innovative types of assessment.

The CBAs used in the present study were regarded by the children as being more like 'games' than 'work'. This appears to have been a significant motivator and the principal reason for the preference for the CBAs over the conventional tests.

f) Assessment in special education.

Most notably, in assessment of children with severe physical disabilities or profound sensory impairments.

g) Wider access to up-to-date assessments.

In particular, the potential (yet to be realised) of the internet for delivery of the most up-to-date version of any specified CBA to any classroom in the world on demand.

Here are some advantages of Computer-based assessment:[11]

a)  Development time and associated costs.

      Due to programming and other technical requirements, the creation, validation and standardisation of any test in computer form generally takes longer and is more expensive to develop than an equivalent conventional form.

b)  Limitations in certain aspects of assessment.

      CBA is best suited to measurement of cognitive and intellectual abilities, fact knowledge, basic skills and curriculum content. That leaves several important aspects of behaviour that are currently impossible (or impractical) to measure using CBA, including expressive language, social and emotional behaviour, and probably any assessment where large amounts of text reading are required.

c)  Risks of technology failure.

      Although these can never be eliminated, experience suggests that hardware and software reliability is steadily increasing.

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[11] Chris Singleton, "Computer-based assessment in education," (Department of Psychology, University of Hull, Educational and Child Psychology, (Special Issue on 'Information Technology and Children's Learning') Vol. 18, No. 3, 2001)

d) Risks of abuse.

The ease of use of CBAs, although one of their principal advantages, also creates potential dangers because users who do not properly understand the nature of psychological or educational assessment may be tempted to use them and may misinterpret findings as a result.

## 4. Computer-based Assessment Linked to Performance

Not every student has the ability to succeed when placed in front of a computer and asked to perform a task. Ricketts and Wilkes suggest that:

> "The performance of students needs to be carefully monitored to ensure that any changes in delivery are seen to be fair and consistent and that the use of computer-based assessment is generally acceptable to students, who particularly appreciate the speed of marking and feedback."[12]

However, the acceptability to students is highly influenced by the way in which questions are presented. Thus, presentations which require scrolling are less acceptable than those in which questions are presented one at a time.

> "Wang et al, states that formative assessment refers to those activities that are used to help students learn. These types of activities include short tests and quizzes, question and answer in the lesson, assignments, homework, and so on."[13]

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[12]Rickets, & Wilks, Is computer-based assessment good for students?, in: M. DANSON & C. EABRY (Eds) Proceedings of the Fifth International Computer Assisted Assessment Conference 2001 (Loughborough, Loughborough University, 2001).

[13] Wang, et al. *"Learning styles and format assessment strategy: enhancing student achievement in Web-based learning",* (Journal of Computer Assisted Learning, 22, 207-217, 2006).

The learning environment must consider centralization in assessment, in particular to value formative assessment.

> "Higgins, Russell, & Hoffman concluded that scrolling negatively affects students with low computer skills and knowledge, but that more research would need to be done to get a more vivid Figure of the impact of different types of computer-based assessments."[14]

It is not just that computer-based assessments may affect the way that students learn but it is also the type used that also has an effect. Whether students are able to see whole passages or the assessment requires scrolling will affect their performance. This information is not however readily available and the situation needs to be carefully monitored so that it is possible to identify any changes in performance due to changes in delivery.

## 5. Characteristics of a Good Assessment Program

According to Palomba & Banta, there are 13 Characteristics of a Good Assessment Program.[15] A good assessment program does the following:

1) Asks important questions

2) Reflects institutional mission

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[14]Higgins et al, *"Examining the effect of computer-based passage presentation on reading test performance",* (Journal of Technology, Learning, and Assessment, 3(4) (2005), Available from http://www.jtla.org

[15]Catherine A. Palomba and Trudy W. Banta, *Assessment Essentials: Planning, Implementing, and Improving Assessment in Higher Education*, (San Francisco, CA: Jossey-Bass, 1999), 16.

3) Reflects programmatic goals and objectives for learning

4) Contains a thoughtful approach to assessment planning

5) Is linked to decision making about the curriculum

6) Is linked to processes such as planning and budgeting

7) Encourages involvement of individuals from on and off campus

8) Contains relevant assessment techniques

9) Includes direct evidence of student learning

10) Reflects what is known about how students learn

11) Shares information with multiple audiences

12) Leads to reflection and action by faculty, staff, and students

13) Allows for continuity, flexibility, and improvement in assessment

6. **Assessment**

a) Definition of assessment

Assessment is the process of gathering data. More specifically, assessment is the ways instructors gather data about their teaching and their students' learning.[16]

The term 'assessment' is used both as a general umbrella term to cover all methods of testing and assessment, and as a term to distinguish 'alternative assessment' from 'testing.' Some applied

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[16]Hanna, G. S., & Dettmer, P. A., *Assessment for Effective Teaching: Using Context-Adaptive Planning.* (BOSTON, MA: PEARSON A&B, 2004)

linguists use the term 'testing' to apply to the construction and administration of formal or standardized tests such as the Test of English as a Foreign Language (TOEFL) and 'assessment' to refer to more informal methods such as those listed below under the heading 'alternative assessment.' For example, Valette says that 'tests' are large-scale proficiency tests and that 'assessments' are school-based tests. They therefore use the term 'assessment' as the wider, more acceptable term.

i. Types of assessment

There are three types of assessment: diagnostic, formative, and summative. Although are three are generally referred to simply as assessment, there are distinct differences between the three.

1) Diagnostic assessment

Diagnostic assessment can help you identify your students' current knowledge of a subject, their skill sets and capabilities, and to clarify misconceptions before teaching takes place. Knowing students' strengths and weaknesses can help you better plan what to teach and how to teach it.

2) Formative Assessment

Formative assessment provides feedback and information during the instructional process, while learning is taking place, and while learning is occurring. Formative assessment measures student progress but it can also assess your own progress as an instructor.

3) Summative assessment

Summative assessment takes place after the learning has been completed and provides information and feedback that sums up the teaching and learning process. Typically, no more formal learning is taking place at this stage, other than incidental learning which might take place through the completion of projects and assignments.

Computer-based Assessment is a powerful idea that is driving huge changes in education world. Assessment is an important factor that reflects and affects the quality of learning and education. Assessment plays a major role in driving student in increasing their learning. According to the National Research Council states that, 'assessment is high quality information about

students' performance that informs teaching and learning'.[17] Assessment identifies learner needs and can influence future planning if linked with appropriate resources. Moreover, assessment is a well organized and well defined measuring tool providing timely feedback for learning outcomes.

### 7. Students Examination Score

Examination score refers to the learner ability within a classroom lesson, unit, or even curriculum.[18]  In addition, David Nunan in his book states that examination score is student mastery in specific curricular objdectives.[19] It means that examination score is student mastery for specific objectives within the lesson or curriculum. In this case, students' English examination score refers to the students' acquisition in English objectives which is contained in lesson, unit, or curriculum. Likewise, Richards explains that curriculum goals are to represent the outcomes of a language program.[20]

### A. Scales of Measurement

Language researchers commonly describe the different ways to measure things numerically in terms of scale of measurement,

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[17]National Research Council, "*Assessment in Support of Instruction and Learning: Bridging the Gap Between Large-Scale and Classroom Assessment  Workshop Report*". Retrieved from http//www.nap.edu/catalog/10802.html, (2003).

[18] Douglas Brown and Priyanvada Abeywickrama, n.d.:9)

[19]David Nunan, *Task-Based Language Teaching*, p. 143

[20]Jack C. Richards, *The Language*, p. 67

which come in four flavors: nominal, ordinal, interval, or ration scales. Each is useful in its own way for quantifying different aspect of language teaching and learning. Interval scales show the order things, but with equal intervals between the points on the scale. Thus, the distance between score of 50, 51, 52, 53 and so forth are all assumed to be the same all along the scale. Test score are usually treated as interval scales in language research.

Ratio scales differ from interval scales in that they have a zero value and points along the scale make sense as ratios. For example, a scale like age can be zero, and it makes sense to think of four years as twice as old two years.

Researchers are often concerned with the differences among these scales of measurement because of their implications for making decision about which statistical analysis to use appropriately for each. At times, they are discussed in only three categories nominal, ordinal, and continuous.

B. Likert Items and Scales of Measurement

Likert items were first introduced by Rensis Likert (1932). The following is an example of the categorization of students' examination score based on Likert scale:

90 – 100 = excellent

80 – 89 = very good

70 – 79 = good

60 – 69 = fair

< 60 = poor

The likert items have five options. First scale is on 90-100 range which means excellent. Students that have score on that scale is in categorize to be excellent. On second items, there is scale on 80-89 range, which is mean very good category. Students are belong to very good category if have score on that range. On the following range, there is good category if a student has a score in 70-79 range. Next, Likert interprets that students have score in the 60-69 range are belong to fair category. The last item is poor which the score is less than 60 ranges. [21]

Despite all the discussion of the ordinal nature of Likert items and scales, most of research based on Likert items and scales that the researcher seen in our filed treats them as interval scales and analyzes them such with descriptive statistic like means, standard deviations, etc. and inferential statistics like correlation coefficients, factor analysis, analysis of variance, etc.

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[21] James Dean Brown, SHIKEN : JALT testing & Evaluations SIG Newsletter. March 2011. 15(1)pp 10-14

In addition, several papers have shown that Likert scales can indeed be analyzed effectively as interval scales. Also, Allen and Seaman support treating Likert scales as interval data with certain rather sensible provisos:

> "The intervalness here is an attribute of the data, not of the labels. Also, the scale item should be at least five and preferably seven categories. Another example of analyzing Likert scales as interval values is when the sets of Likert items can be combined to form indexes. However, there is a strong caveat to this approach. Most of researchers insist such combinations of scales pass the Cronbach's alpha or the Kappa test of intercorrelation and validity. Also, the combination of scales to form an interval level index assumes this combination forms an underlying characteristic or variable"[22]

In another vein, a number of authors have shown how Rasch can be used to analyze and improve Likert scales as well as transform them into true interval scales.

### 8. Students perceptions

a) Definition of Perceptions

Perception has various definitions since there are many ideas come from experts. According to Jalaluddin Rahmat perception is the experience of objects, events some relations obtained by inferring information and interpret the message.[23]

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[22] Rob Johns. Likert items and scales. Survey Question Bank : Methods fact sheet (1 March 2010). University of Strathclyde

[23] Rakhmat, Jalaludin, *Psikologi Komunikasi, ( Bandung*. Remaja Rosdakarya, 2007).

The definition of perception can be simplified as an interpretation of focusing in particular objects.[24]

Some studies also say that there is a relationship between perception and action. Michael started by defining perception (ecologically) as "the detection of information"[25]. This definition binds an action to perception, as it states that there can be no action without detection of information (which is perception) its core contention is that perceived events and planned actions share a common representational domain.[26]

From some definitions above, it can be concluded that perception of the students as the process of interpretation, organization of students' stimulation are influenced by a variety of knowledge, desire, and experience, which are relevant to stimulation effected by human behavior in determining the purpose of his life. The respondent as the impact from perception can be taken by individual in various ways and it depends on the individual itself. In addition, perceptions are detection of information, and the perceptions cannot separate by action.

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[24]Sarwono,"Pengantar Psikologi Umum", (Jakarta: PT Grafindo Persada, 2010). 86
[25]Mabe, Michael, "*An overview of Scientific Scholarly Journal Publishing*", (USA: The STM Report, 2012).
[26] Smeets, Jeroen, "*Perception and action are inseparable",*(Netherlands: Lawrence ErlbaumAssociates, 2001).

b) Factors that influence perception

There are three elements which give the important role in perception, and the elements itself are divided into 3 elements.[27]

1) Object that is perceived

An object will cause stimulus and it will be received by human's sensory device.

2) Receptor/Human Sense/Sensory Device

Receptor is tool to receive the stimulus

3) Attention

To do every kinds of perception, it must be needed an attention. Because of the first step to do perception, an individual has to focus or concentration on that particular object which may be different with other individual's concentration.

The coming of perception does not happen directly without any process, but it has very unique process. The first process called physical process where the stimuli are received by receptors. The second process is physiology process where the receptors continue the stimulus to the brain. The last one is psychological process where the brain as the core of consciousness interprets what the individual sees, hears, feel, etc.[28]

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[27] Walgito, B, *"Pengantar Psikologi Umum"*,(Jakarta: Penerbit Andi, 2010), 101.
[28] Walgito, B, *"Pengantar Psikologi Umum"*,( Jakarta: Penerbit Andi, 2010), 102.

c) Perceptions Measurement

Measuring the perception is almost the same as measuring attitudes. Although the measured material is abstract, but the attitude and perception can be measured, where attitude toward an object is translated in number. There are two methods in the measurement of attitudes:

1) Self Report

Self Report is a method in which the answers given can be an indicator of a person's attitude. But the drawback is if the individual does not answer the attitude question, so it cannot detect their attitude or perceptions.

2) Involuntary Behavior

Involuntary Behavior performed if desired, or can be carried out by the respondents; in many situations the measurement accuracy attitudes influenced the willingness of respondents.

From the statement above, in measuring the perceptions is almost the same as measuring the attitude. The attitude scale can be used or modified to uncover perceptions that can be known whether

perception of one's positive or negative towards something or object.[29]

Bull states that the use of CBA as summative assessment gives advantages in practical and economical area. It allows testing, examination use in large scale with automated grading.

"The use of computer-based assessment (CBA) as a summative tool has both practical and economical benefits in that it allows testing of a large student cohort with the facility of automated marking of perceptions."[30]

Meanwhile, McDonald states that Student perception to CBA, as a summative tool, has been mixed and clearly associates with individual differences associated with computer experience, computer anxiety and computer attitudes.[31]In addition,Bocij & Greasley states that Many students have described CBA as less threatening than conventional examinations.[32] Meanwhile, Thelwall have reported enhanced levels of motivation and confidence.[33] Differently, Brosnan states that this same level of

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[29]Slameto, (2003). *Belajar dan Faktor-faktor Yang Mempengaruhinya*, p. 105

[30] Bull, J, *Computer Assisted Assessment: Impact on Higher Education Institutions.* (Educational Technology & Society, 2(3), 1999).

[31]McDonald, A, *"The impact of individual differences on the equivalence of computer-based and paper-and-pencil educational assessments",* (Computers and Education, vol.39, no.3, 2002) 299.

[32] Bocij, P & Greasley, A, *"Can computer-based testing achieve quality and efficiency in assessment?"*, (International Journal of Educational Technology, vol.1, 1999)

[33]Thellwall, M, "Open access randomly generated tests: Assessment to drive learning', *in Computer-assisted assessment in higher education"*, eds S Brown, P Race & J Bull, Kogan Page,(Birmingham, 1999) 62.

enthusiasm for CBA has not been shown by students who are computer anxious or less experienced with technology[34].

In addition when a computerized assessment is given, the test can be scored immediately and the student can see their grade right away. There are many aspects of computer-based assessments that really do need to be examined before we can make any conclusions whether or not computer-based assessments are step forward for education. The different views from students and educators one can determine the impact that these types of assessments have on education and data. In this research, students' perception means their interpretation were influenced by a variety of knowledge, desire, and experience towards *ProProfs* online Computer-based Assessment software as an assessment tool at English Education Departement, UIN Sunan Ampel Surabaya.

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[34] Brosnan, M, "Computer anxiety in students: Should computer-based assessment be used at all?", in *Computer-assisted assessment in higher education*, eds S Brown, P Race & J Bull, Kogan Page, (Birmingham, 1999), 47.

## b. Previous Study

Not much research about *ProProfs*testing model has been published. Although there is no research that taken*ProProfs* as the main topic at thesis research but there are some international journal or thesis which mentioned *ProProfs* in their research. The first is research with the title "Information Technology of Easy English For Children (Blog Education)" by Pandu Seto Dewo Prabowo and Arido Laksono, S.S, M.Hum.[35] The writer creates interactive materials to learn English by using blog as a medium that can be accessed through the internet. The writer decides to choose proprofs.com to create the exercises for the web blog.

The second research is conducted by Bc. Jan Bleha[36] with the title "Project of public e-learning portal". This thesis analyzes the phenomenon of e-learning education. The goal of this work is first of all to describe the current state of cloud based e-learning services enabling teachers to create, publish and sell their educational courses online. Consequently, a project for a new educational portal is designed with a comparison to those e-learning portals previously described. *ProProfs* is one of some portals will be tested for the research.

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[35] Pandu Seto Dewo Prabowo and Arido Laksono, Thesis: *"Information Technology of Easy English for Children (Blog Education)"*.

[36] Bc. Jan Bleha, Thesis: *"Project of Public E-Learning Portal"*, (Masaryk University, 2013)

For the next previous study are close to the same research area in CBA. The third research is conducted by John Mulvaney.[37] The purpose of his study is to examine computer-based assessment and their effect on middle school age student learning. The result is Students were more favorable toward CBAs and were more positive. The title of the fourth research is "Students' Perceptions about Online Assessment: A Case Study" by Refik Şanli.[38] The results indicated that students have positive attitudes against online assessment. The last research is from Judith Kearney, et al[39]. The title is "Computer-Based Assessment: Its Use and Effects on Student Learning." From those researches above, the research in this thesis was having different issue.

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[37] John, Mulvaney, Thesis: *"Computer-based Assessment and the Effects it has on Middle School Aged Students"*. (The Graduate School University of Wisconsin-Stout, 2011).

[38] Refik, Şanli, Thesis: *"STUDENTS' PERCEPTION ABOUT ONLINE ASSESSMENT: A CASE STUDY"*, (The Middle East Technical University, 2003).

[39] Judith Kearney et al, Thesis: *"Computer-Based Assessment: Its Use and Effects on Student Learning"*, (Griffith University).