

## Evaluation of Integrated ESP Course Using Hypermedia Software for Effective Learning and Teaching in Pakistan

**Dr. Muhammad Saeed Akhter**

*Associate Professor, Head, Department of English, Riphah International University, Faisalabad Campus, Faisalabad*

**Ayesha Zafar**

*Director, Language Centre, University of Management and Technology Lahore*

**Dr. Noreen Saba**

*Assistant Professor, Department of English, Riphah International University, Faisalabad Campus, Faisalabad*

Corresponding author email id: [msaeed.akhter@riphahfsd.edu.pk](mailto:msaeed.akhter@riphahfsd.edu.pk)

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**Abstract:** This research paper discusses the evaluation and integration of Hyper Media Technologies in English for Specific Purpose (ESP) course with a particular emphasis on improving the quality of English language learning for computer science and business students. The rational acceptance of English as an international language has necessitated integration of latest pedagogical philosophies and technological advancements in teaching it across different cultural settings and catering to the needs of diverse audiences. Students in schools, colleges and universities frequently exhibit significant variance of language proficiency underpinning the importance to redesign the teaching methodology which can effectively cater to their individual deficiencies rather than adopting a universal, one-size-fits-all model. The conventional classroom lecturing has inherent shortfalls which directly influence the achievement of the course outcomes and reduce the effectiveness of integrated language learning modules: Reading, Writing, Listening and Speaking skills. The challenges faced by the learners arise from the intricacies concurrent with the absorption of meta-linguistic skills such as rules of syntax, grammar, vocabulary and morphology, limited practice time, lack of teachers' attention, introversion or shyness of learners in the presence of their peers and delivering identical course contents to pupils in the same class but with different levels of language proficiency. Based on the premise that students have different learning curves, a plausible and established solution is the use of three approaches: 1) Declarative learning – acquiring information that one can speak about; 2) Accelerated learning – learning the same content within a significantly shorter period of time or learning more content within the same period of time; and 3) Blended learning – in which a student can learn through online content with freedom of time, place, path, or pace. In order to incorporate these approaches in the curriculum of ESP, a team of Pedagogues and IT experts has developed a Software System, integrating pedagogy with computer-mediated technology. The online hypermedia software is making use of varied strategies and techniques to enhance language capability of reading, writing, listening and speaking, particularly laying focus on learners' understanding of the reading passages, writing paragraphs, précis and essays, listening and speaking skills through audios and phonological patterns for spoken word recognition, articulation, and

speech fluency. This system is for academic purposes and adapts itself according to the requirements of the learners. For the successful implementation, English language curriculum is modified after the need analysis of designed content from a Pakistani student's perspective in ESL context. Moreover, the adaptive educational hypermedia is developed for the computer science students of first semester studying in a private university of Lahore at undergraduate level. The pedagogy of the system is adapted from Transparent Language Online and the division of units and activities incorporates Declarative Accelerated Blended Learning. The investigation depicts that the use of relevant pedagogy and E-content integrated with ICT tools supports students' learning process and enhances their language skills. Its prototype is currently used and the results depict that the adaptive educational hypermedia supports self paced learning, encourages low affective filter and its modified lessons make learning fun.

**Keywords:** ESP, ICT, E-content, Hypermedia

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### INTRODUCTION

Technology, electronic devices and online language learning tools accelerate the procedure of learning English for Specific Purposes (ESP). As it is generally understood, that one must learn the four skills: listening, speaking, Reading and Writing in order to achieve proper understanding about language and to produce language for effective communication in academic, occupational, national and international context. Technology helps the learners to meet their demands and attain this treasure of learning. ESP courses do not include students only as it also includes English language teachers, strategy producers and syllabus designers.

In Pakistan English language has been taught as a second language in schools, colleges and universities to gain content knowledge by putting emphasis on getting good marks or pass the subject. There are two types of educational backgrounds of students when they enter in university for their under graduation studies. First category is of those students who are taught English with medium of Urdu language in schools and the second category belongs to the students of medium of English language. It's not only the matter of medium of language but also curriculum design and pedagogical approach. For instance, intermediate English curriculum lacks of communicative activates. There are neither visuals nor even listening or speaking activities. The activities are included in the form of plain text and written questions in the end of the chapter. Moreover, Lectures are delivered with teacher-centered approach in which students attend lectures passively and teacher use grammar translation method to teach English. Knowing these issues considerable, this research focuses to find out the solution in order to overcome student's problems with reference to ESP courses.

Hypermedia is one of the technological tools which have played a vital role in order to make ESP learning and teaching effective. This research aims to develop integrated skills modules for ESP courses for the undergraduate learners of the first semester in order to decrease the level of stress during academic communication they have to face and improve language skills meanwhile their academic years. This learning material for an online environment best meets the needs of university students. The utilization of hypermedia software is currently typical in computer-based learning and permits data to be introduced in an intelligent, non-direct way while pleasing a rich assortment of sight and sound, improved correspondence and coordinated connections. The two principle techniques used are adaptive navigation and adaptive presentations.

### 1.1 Purpose of the Study

This research investigates the influence of applying integrated modules of erudition approach to provide personalization in computer assisted training settings. It offers observed evaluations of how diverse user groups studying ESP courses cooperated with hypermedia system that delivered content that was altered to backing learning styles.

### 1.2 Research Objectives

The objectives of this research are as follows:

- a) To explore how learning styles can be utilized in ESP courses to give personalization to learners in Computer-based learning.
- b) To find out the effectiveness of hypermedia language learning programme and development of best suited modules for ESP students.
- c) To identify the motivation level of ESP students while learning with computer assisted programme.
- d) To investigate the outcome of ESP course with integrated skills.

### 1.3 Significance of study

It is evident that technology is advancing rapidly in the modern world. It is necessary for students to develop technological skills as they are learning English for specific purposes to benefit their lives in this modern society. Cook (2005) and Brown (2005) suggested technology remains an important tool to enhance learning, adult ESP instructors and students must recognize the importance of technology incorporated into the English as a Second Language (ESL) setting. The modules are significant because they will provide students with computer skills and learning English language as per their needs. The modules aim to improve learners' language skills, specifically grammar, listening, speaking, reading and writing.

### 1.4 Problem Statement

In Pakistan there has been very little work done with hypermedia courses and there is yet a big gap to utilize hypermedia in education and language learning according to context. There is current approach now is called AHS (adaptive hypermedia system) which is intelligent software including characteristics: adapt student interaction with computer and navigation interest and recommend its learners according to their level.

### 1.5 Limitations

Hypermedia has limitations as do other interactive media. It cannot replace the teacher, especially to dialogue through two-way communication.

## 2 LITERATURE REVIEW

Nielsen (1995) states that hypermedia is a computer based application in which material is managed and saved in relation between nodes associated through links. These nodes comprise of video, audio, visuals, script, source code, or other information and are intended to be observed through an interactive browser and handled by an administration panel. Information is retrieved through nodes within browsers, whereas node content and links can be allowed to alter through structure editors. In some platform operators can modify data on knowledge base when browsing, whereas some involve isolated authoring software.

### 2.1 The Effectiveness of Hypermedia in Education

Various investigations have declared range of positive outcomes on learning results after hypermedia was incorporated within the learning condition. Baker et al. (1994) states that hypermedia allows students to figure out which, and in what arrangement, data will be shown; conceivably designing when, what, and how understanding will unfold. Therefore, the instructive experience can be custom fitted to meet the individual student's one of a kind needs, a considerable lot of which develop among the association with the hypermedia condition. Conner (2004) states another advantage of hypermedia application is it addresses a significant number of the traits that encourage important adapting, for example, taking into consideration dynamic student cooperation including perplexing, logical circumstances, advancing reflection and giving and condition that is drawing in to the student.

### 2.2 Hypermedia for ESP Learning and Teaching

Yeh and Lehman (2001) examination exposed that ESP students utilizing Hypermedia in student control situation clearly outperformed which led solid proposal for learner-control environment rather than program-controlled condition. Their finding was comprising with present second language learning hypotheses, for example, communicative language learning and Krashen's supposition of second language acquisition, which stretch that students need to effectively associate with the outside condition amid taking in a second dialect. Precisely, second/foreign language learner should have authorities for some point to control over the learning condition. The investigation additionally coordinated that a student control treatment and the utilization of advance organizer are valuable for EFL/ESL understudies taking in English from intuitive hypermedia exercises. Student control is particularly useful for learners with low English learning technique apply, who turned out to be more viable EFL students.

Discoveries of their investigation proposed the following feasible applications in EFL learning: Since understudies learn English better in a student control condition, instructors ought to deliver a more intuitive condition with decisions for clients to direct their own particular learning in their EFL educational programmes. For programming planners, EFL projects ought to consider the issues of student control and intelligence in their projects. The consequences of this investigation affirm the convenience advance organizer in intelligent hypermedia exercises in EFL learning. The impacts of propel advance organizer ought to urge programming originators to incorporate them in the product as a theoretical structure for understudies. The outline and improvement of EFL projects should think about EFL understudies' potentials. For learner with lower levels of English learning methodology utilize intuitive sight and sound gives a decent situation to do the English learning

system preparing. Future research needs to analyze other student talents in gaining from intuitive interactive media.

Millan (2007) says that the materials for hypermedia applications including large visual elements and offering strong link concerning sound, image and text which attract and strongly motivate learners to engage themselves with the world on offer, is considered to be at their best. One of the examples is "Microcosm"(language learning hypermedia software) an open hypermedia system which offers tractable world of interactive videos saved with linked drills whether concentrating on grammar, function or vocabulary. Learner can have access to multiple tools and relevant database working on Microcosm-based package for the whole variety of language learning process for example, word processors, e-mail, spelling and grammar checkers, on-line dictionaries which even offer pronunciation and reference sentence structures, daily electronic papers, e-content and reference books. World Wide Web sites in a nation where the objective language is talked, can be arranged as of inside Microcosm to direct the students. Such a situation deals unendingly adaptable assets to both the instructor and the student in an ESP context.

Hutchings et al. (1994), say that students can work as indicated by their personal particular desires, passion, preferred erudition style and hustle. Instructors can establish particular undertakings, empower group and team activity, and add to the material voluntarily. Likewise with understudies utilizing different media theme packages, the instructor could take a non-interfering position or give an arrangement of rules. In the last situation, these could be absolutely direct where the student, maybe a novice, needs to take after a pre-decided way through what are thought to be vital things, or, while the student is sure and further ready to decide, they could suggest an arrangement of stretching fact-finding choices their own.

### **2.3 Integrated Skills Teaching for ESP Courses**

Oxford (2001) states that teaching English is an artwork which is woven from different strands, for example, characteristics of teacher, the learner, the settings, and relevant language, for teaching purpose all of the four skills (reading, listening, writing and speaking) must be interlinked in constructive way. For instance, the teacher's instructing style surely address the student learning style, the student must be persuaded and the setting must give assets and qualities that clearly boost the language learning. On the other hand, if the elements are not woven with each other efficiently, the instructional approach is likely to create something little and ineffective. Further, above mentioned four skills also consists the information of lexis, spelling, articulation, grammar, meaning and practice which would lead excellent EFL communication when these strands and aids interlaced throughout instruction. This approach is called mixed-skill approach.

Nunan (1989) declares that in task-based teaching, learners get involve in communication activities in English. Assignments are characterized as exercises that can remain alone as crucial lessons and that require grasping, delivering, controlling, or communicating in target language whereas consideration is primarily paid to importance instead of frame. Language skills teaching outside and inside the classroom for communication purpose were changed by the arrival of communicative competence. Hinkel (2010) explains that, communicative method headed for language instruction produced result in the integration of the four skills and their components, which can complement each other. In this case, skills are combined in a way that people utilize language skills in normal communication.

## RESEARCH METHODOLOGY

### 2.4 Research Design

This research is cross-sectional in nature. Moreover, quantitative technique is used to investigate the issues related to the development, integration and uses of hypermedia in ESP courses. Sample Population

Two hundred undergraduate students of first semester were selected as a sample population. All the students were studying in the faculty of Computer Sciences and Business in a private sector university in Lahore. They were randomly selected and the participants included female and male while their age range varied from 20 to 24.

### 2.5 Research Tool

For the purpose of data collection, a Likert Scale questionnaire was selected as an instrument, to find out the interest and outcome of students opinion about learning outcome and modules effectiveness. It focused on:

<b>Content</b>	<b>Organization and Presentation of Content</b>	<b>Pedagogical Parameters</b>	<b>Design Factors</b>	<b>Evaluation of Learning</b>	<b>Assessment</b>
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## 2. Online Hypermedia Software

Online hypermedia software was engaged for presentation and organization of content. It was a most prevalent open source online content management platform. It has the attributes of having an intuitive interface which benefits the students by enabling them to get additional information just by clicking and navigate back and forward. Another significant feature of this software is that it allows its editor to manage content and allow to upload various type of media including, PDF, word, all format for video and audio clips. Hyperlinks were also used in it for extra materials regarding to content requirements.

### 2.6 Lesson Design

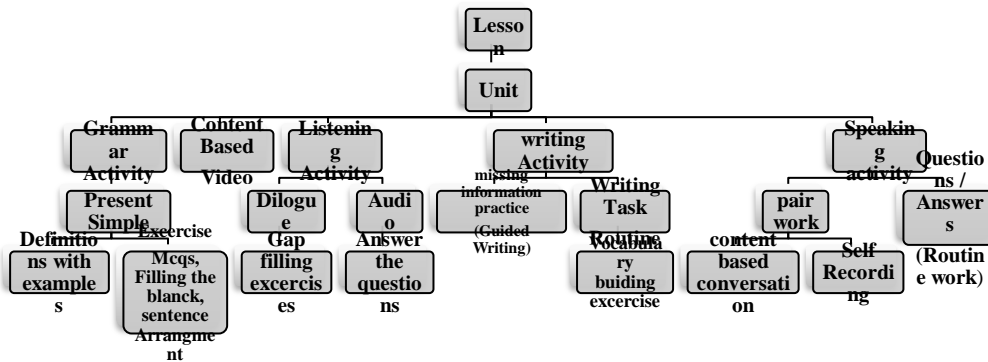


Figure 1: Integrated skills learning activities

## 2.7 Research Procedure

The investigation started with the development of a trail unit with the help of IT domain expert in order to test the need and effectiveness of integrated modules. Among different instructional designs, ASSURE model was adopted to develop learning design. The development of course ware follows ASSURE structure Model by demonstrating its systematic way to deal with instructional plan. This model was developed by (Heinich, Molinda & Russels 1993). Modules encourage student-focused environment and reduce teacher-focused conventional training strategy. The following model explains the strategic plan how this development was done so it would be easier to understand the development procedure.

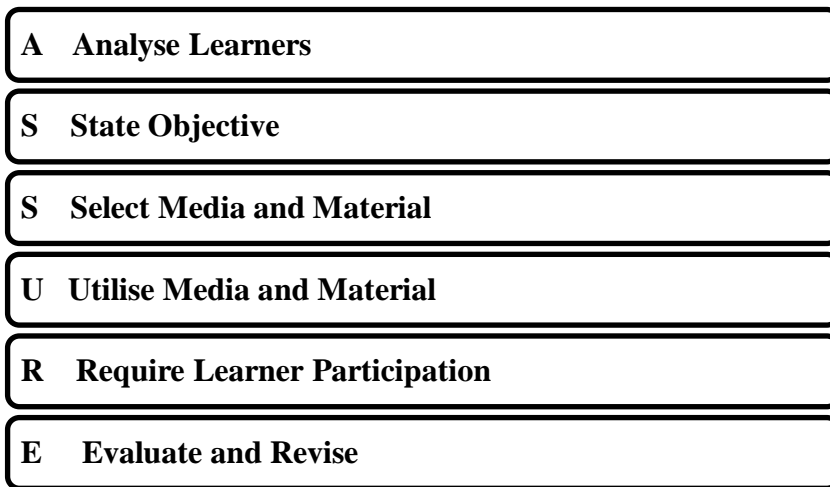


Figure 2:Heinich, R., Molinda, M., and Russell, J.D. Instructional Media.(1993)

Similarly, for the learning activities, to design units and lessons, material was selected and adapted from different sources. For instance, “Interchange” series of English language learning published by Cambridge 4<sup>th</sup> edition is considered to be best at the time based on Communicative approach. Plain text was converted to hypertext to synchronize with software. Video and audio clips were also selected from this series.

Some of the material was taken from “Grammar in use” by John Murphy for the grammar teaching and exercise purpose though text was also converted to hypertext and uploaded to account in order to evaluation of grammar understanding.

Text from Pakistani context was also included for reading comprehension. For instance, historical places, events, Pakistani sports men biography, traditional and religious festivals. These materials were taken from English newspapers, magazines and Punjab Text books.

## 3 PRESENTATION OF FINDINGS

Students were taught two modules in one semester. Each session was consisted of 90 minutes. Students’ hypermedia accounts were made and they were taught in university’s language lab.



### 3.1 Reliability of the Content

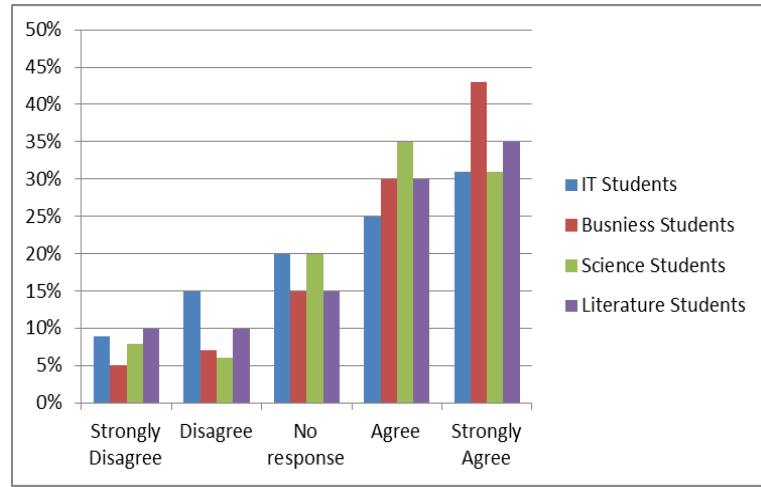


Figure4.1: Is the content of modules is reliable?

As fig.1 illustrates the results and it can be seen in graph that percentage of students who agreed and strongly agreed is higher than others while strongly disagree remained at lowest level.

### 3.2 Demonstration of Cultural, Ethnic and Racial Groups is Balanced in Modules

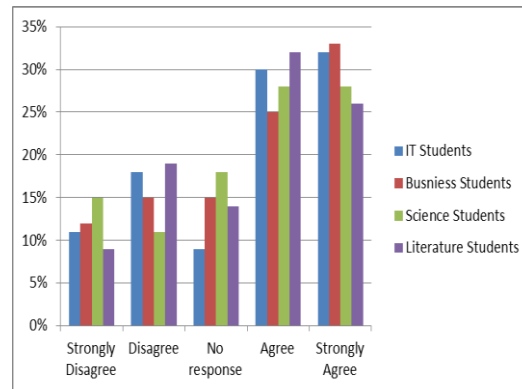


Figure 4.2: Is there balanced cultural representation in the material?

The results are significant of this variable proved that materials used in modules are ethnically and culturally appropriate for students and they are satisfied with it as the percentage in favour was higher in number.

### 3.3 Level (age) appropriate Curriculum material

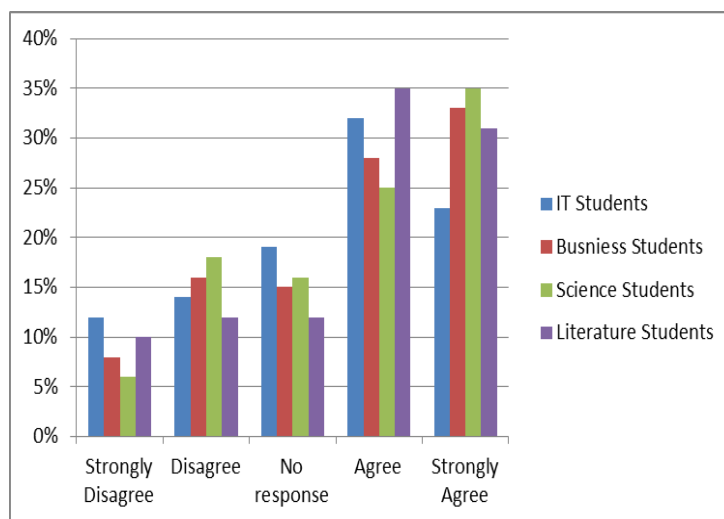


Figure 4.3: Is curriculum level appropriate?

Above graph represents the percentage of students who responded to the question 3. In general 30% to 35% participants strongly agreed that Curriculum material is appropriate according to age group which is highest in graph.

### 3.4 Module is integrated skill based on ESP contexts

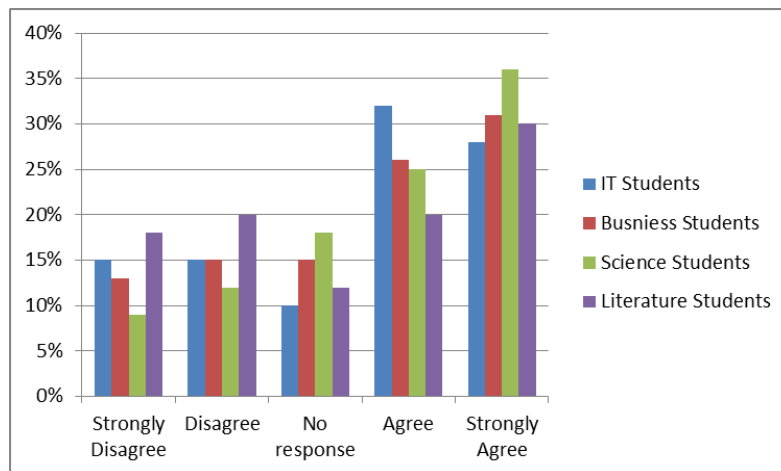


Figure 4.4: Integration of ESP skill based modules

According to the above graph i.e. figure 4.4, participants who responded to be strongly agree are maximum in amount overall between these participants science students are more than 35% and rest of them remained about 30%. The second highest number of participants of those who agreed for the statement. On the other hand, there is fluctuation among the participants who strongly agreed, disagreed and with no response. Literature students are the maximum in amount among them with 20% disagreement.

### 3.5 ESP Course Offered Self learning

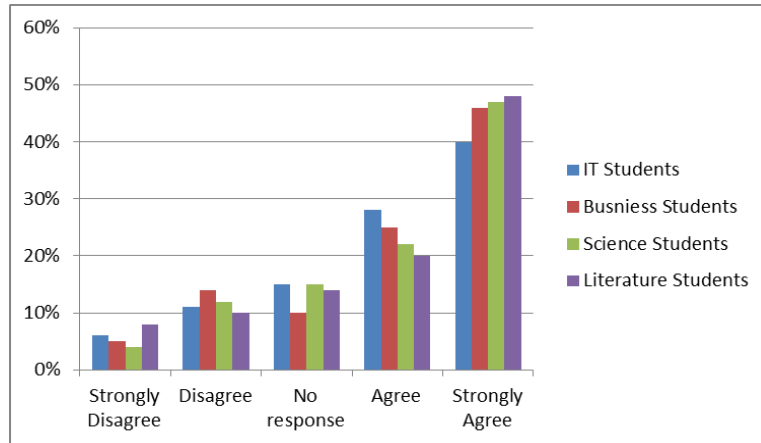


Figure 4.5: Does the ESP course offer self/ autonomous learning?

The results show that there is a markedly difference in percentage between participants with strongly agreed respond and those with strongly disagreed for question 5.

### 3.6 Interactive Hypermedia Activates for ESP Course

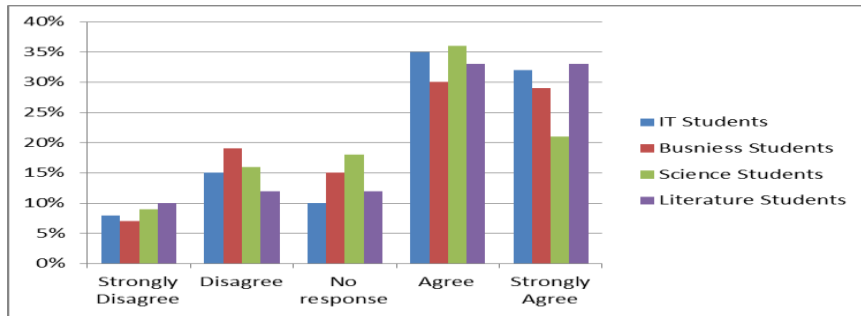


Figure 4.6: Were Interactive activities prepared through hypermedia?

In Figure 4.6 participant who strongly disagreed stayed at the lowest level in overall graph. Among the students who disagreed or no responded were business and science students.

### 3.7 Rational Development of ESP Material

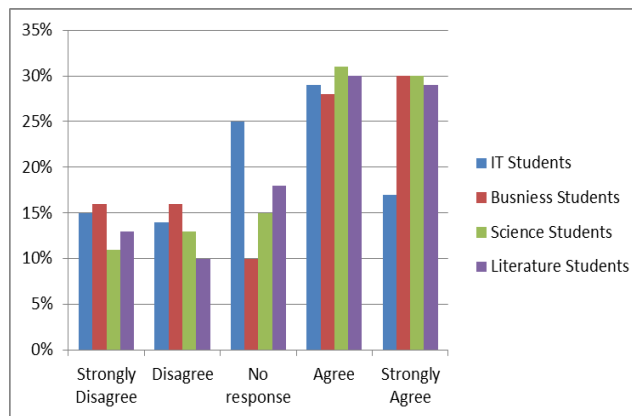


Figure 4.7: Is there any rational development of subjects

In the above figure, i.e. 4.7, students who agree and strongly agree are with greatest number about 30% as compare to the students who strongly disagreed or disagreed, there is significant drop of IT students with 17% which is the least among those who strongly agreed.

### 3.8 Diversity and Complexity of Tasks in ESP Courses

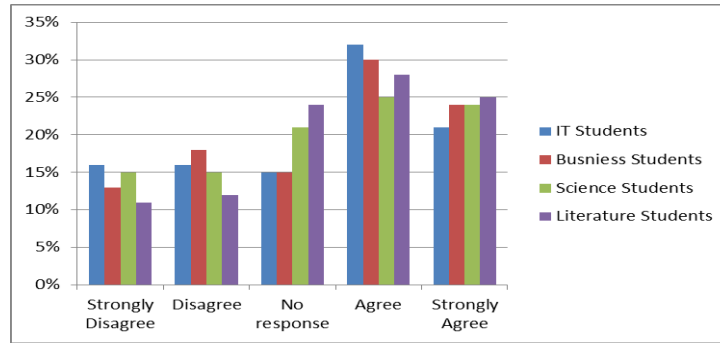


Figure 4.8: Were the activities easy to complex?

The Graphsin the above figure 4.8 demonstrates that a huge number supported this question.

### 3.9 Incorporation of Instructional and Teaching Pedagogies in ESP Course

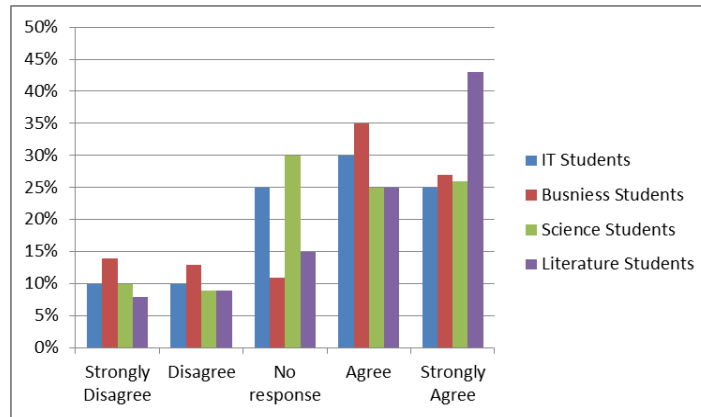


Figure 4.9: Is ESP course grounded on flexible Instructional and learning theories interrelated with syllabus content?

The data from figure 4.9 illustrate that IT students responded positively high with just about 45% and rest of the participants in this group remained stable at 25%. Among those who agreed business students are significantly higher than others in the group with 35%. There were 30% science students with highest amount in group answered with no response and 25% IT students remained at second position in group. On the other hand, there is similarity between strongly disagree and disagree groups about 10% which is the lowest figure in graph.

### 3.10 Display of Audio/ Video Content in an ESP Course

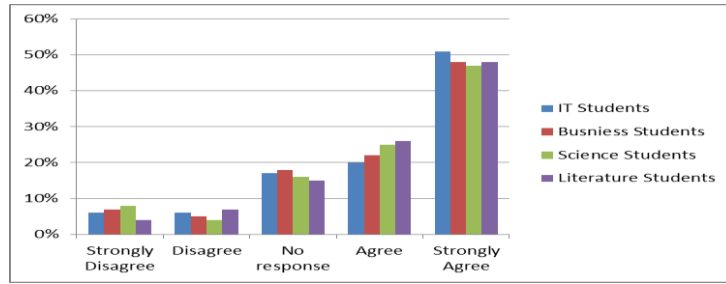
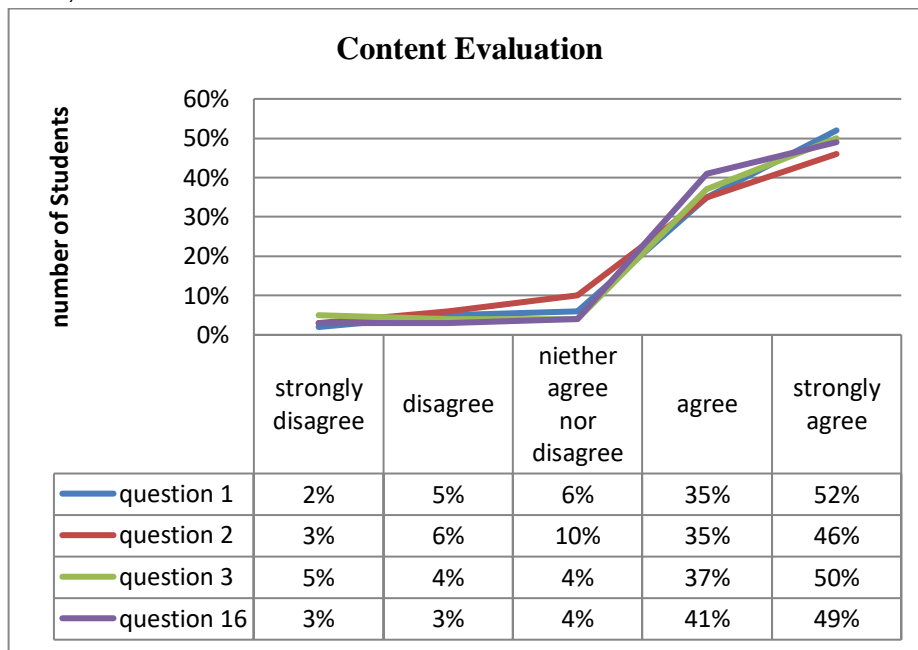
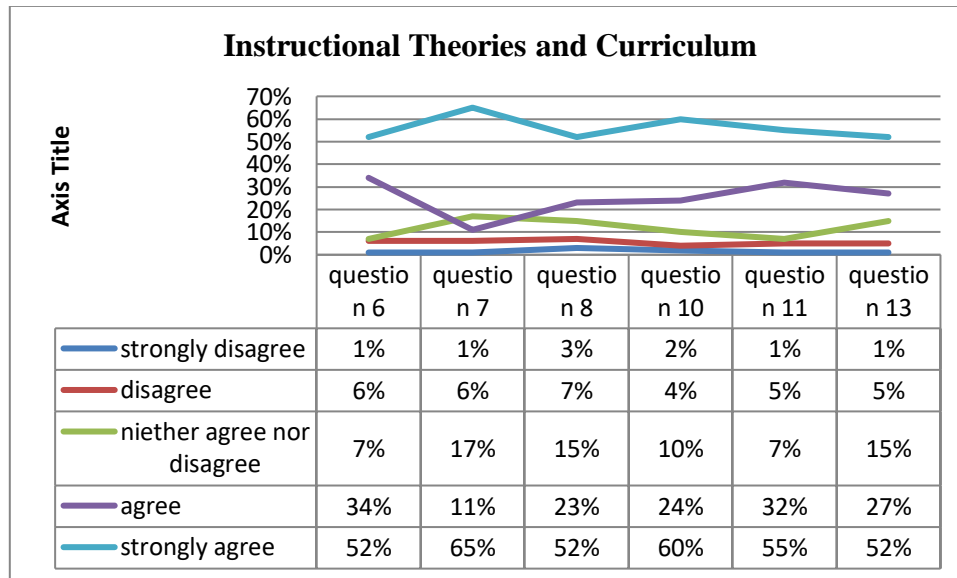
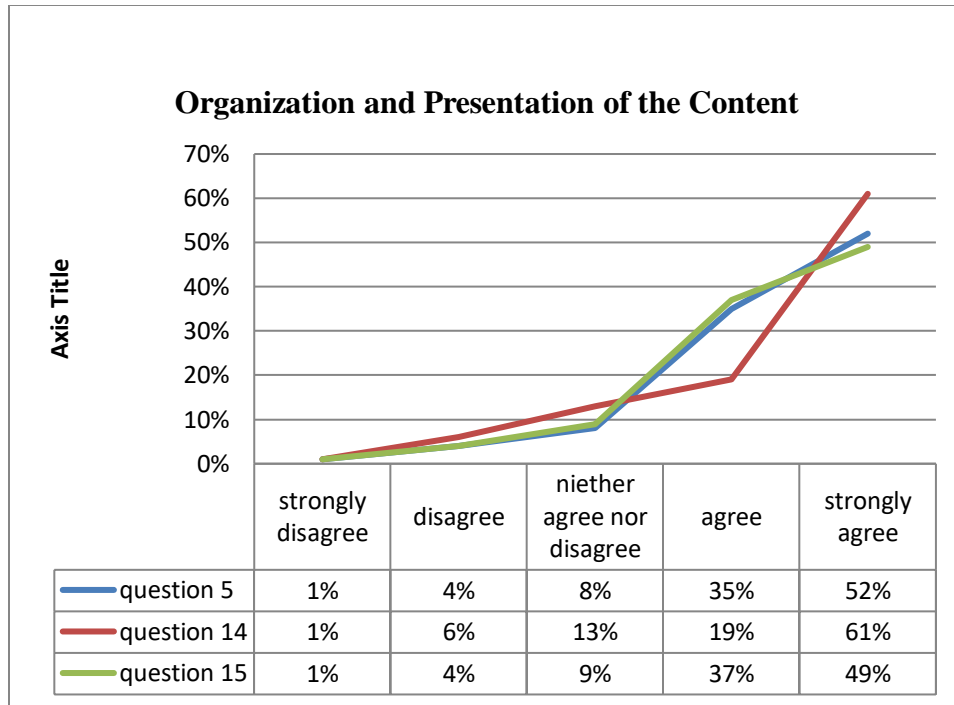


Figure 4.10: Graphs, images, audios, videos and texts are in good quality

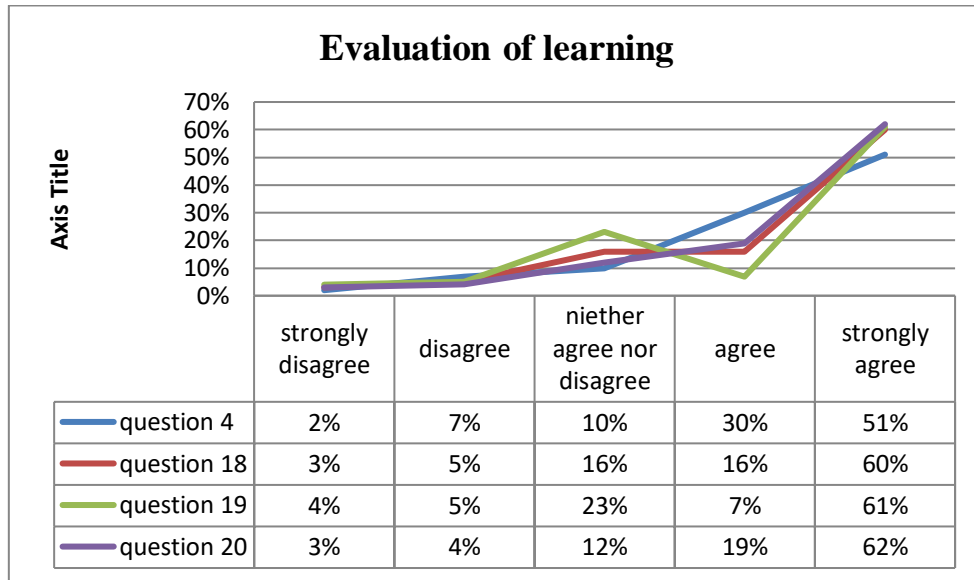
The responses in response to the question regarding the use of audio video text were really surprising as the majority of the participants appreciated the content, designs and graphics.

### 3.11 Overall Analysis of Content Evaluation





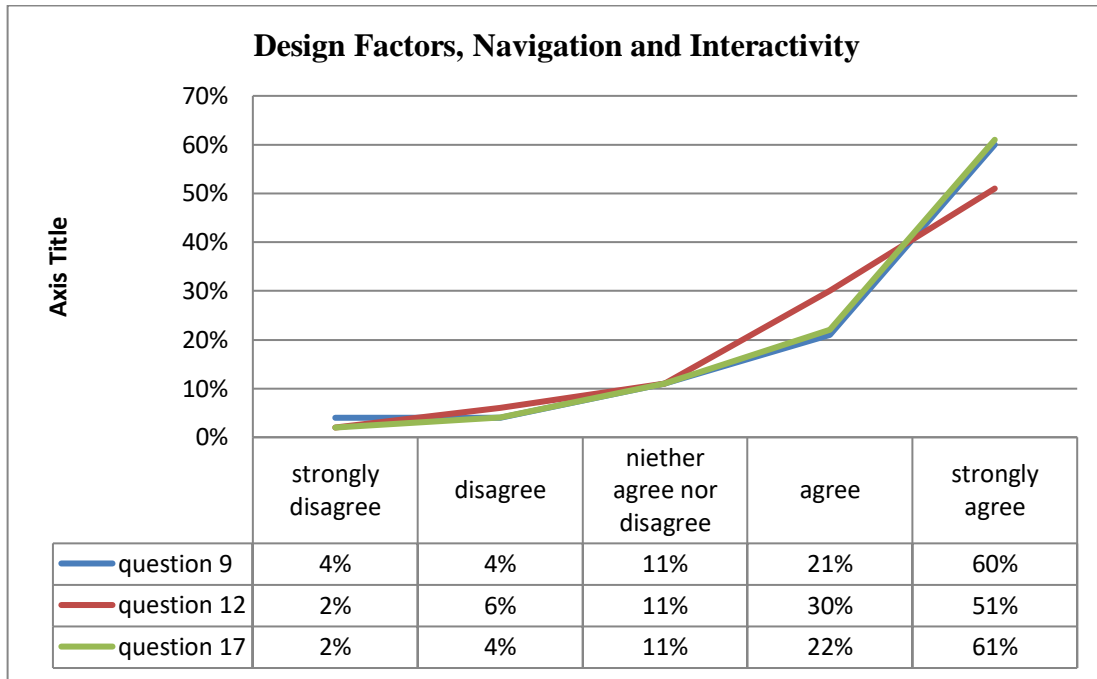
3.12 Evaluation of Learning Outcomes



Questions no. 7, 8,9,10 received responses with highest ratio of strongly agrees, these questions focused on fours skills, self-learning, hypermedia interaction and conceptual understanding instead of memorizing or translation method. According to Barab et. al. (1997) hypermedia allows students to figure out which, and in what arrangement, data will be shown; conceivably designing when, what, and how understanding will unfold. Therefore, the instructive experience can be custom fitted to meet the individual student's one of a kind needs, a considerable lot of which develop among the association with the hypermedia condition. It can be seen in results that maximum students agreed that materials presented in course ware is bias free and quality of images, video and audio is good. Almost 20% of students agreed on objectives and course exercises which are at its low level, expert would need to improve this section of courseware.



### 3.13 Design of Hypermedia ESP Course



Question 9, 12, 17 responded almost 60% students' reply who strongly agreed 8 out of 20 questions answering that hypermedia ESP learning design is the most effective. While 50% students strongly agreed 12 questions out of 20, which is a positive respond from students. It was interactive, useful, stress free learning medium for them.

## 4 Discussion

Student's response assures the validity of content of ESP course content. Brinton & Holten (1997) discussed that by social and communication context and bringing a part of real life into the classroom, media can be helpful to motivate students. It was one of the significant considerations to arrange the material, pictures and videos which represent real life examples to make language learning more communicative.

### 4.1 Content Evaluation

Students' responses state that the content of ESP course was culturally appropriate and as per their needs. Ibrahim (2000) argues that best possible usage of innovation as learning rely upon what kind of job teachers will play. Instructors make the fitting classroom condition for successful learning as per learners' cultural environment.

### 4.2 Organization and Presentation of the Content

In hypermedia software organization and presentation of content plays a vital role. Mayer (2005) support previous statement that when content is presented in time visually, learning is more effective. Mayer and Sims (1994) say that Words and pictures presented simultaneously are more effective than when

presented sequentially. The responses of the participants indicated that Hypermedia integrated the organization and presentation of material according to their level and interest in ESP course. Learning with visual and audio aids is more helpful as compare to plain text with no images. Therefore, students positively responded about grammar learning through hypermedia. They found it different while learning grammar with conceptual understanding instead of language translation method which is usually applied in traditional English language learning classes.

### 4.3 Instructional Theories and Curriculum

In response to questions regarding to teaching pedagogies and instructional theories, majority of the students agreed and appreciated the course because it allowed them towards self- learning and they did not need to ask help with hard materials. The most important issue with university students in Pakistan is that they memorize sentences and learn English in an artificial setting. In order to eliminate it, the research evaluated the integration of conceptual grammar learning lessons instead of translation method. Videos and dialogues were also included in materials to understand the contextual meaning of vocabulary, some of the vocabulary items contain pictures which make this module more effective and student responding to the concern question strongly agreed with it.

### 4.4 Evaluation of learning

One of the concerns of evaluation was to find the answer whether objectives of teaching materials were successfully achieved through the use of hypermedia ESL learning on students. In order to find out the answer students' feedback was analyzed. There were four questions related to this category and the responses showed that students were satisfied with hypermedia ESL learning. They were agreed on usefulness of exercises with every activity which was effective for them to evaluate what they had learn. Cunter (2006) states that evaluations help ESL students.

### 4.5 Design Factors, Navigation and Interactivity

60% respondents strongly agreed with the quality of media in response to question 10, 11 and 12. There is a reason that most of the Hypermedia designer recommend to have media in good quality because it increases students' interest toward learning. Particularly in contexts where processing demands are likely to be high, making the case for EFL/ESL training, Hubbard (2004) wrote that we should not release our students into powerful learning environments unprepared: It is our responsibility to see that they are able to make informed decisions about how to use computer resources effectively to meet their learning objectives. Without instructional support that includes the development of greater language awareness, resources such as online ELT dictionaries may be as likely to provide students with cognitive overload as they are learning opportunities. In other words, it might help learners not only to navigate powerful learning environments more effectively, but to refine their learning objectives by means of increased understanding of what languages consist of and how they work.

## 5 CONCLUSION

This research evaluated that the use of integrated modules and learner control environment are beneficial for ESL/ EFL students to learn English for specific purposes from interactive hypermedia software. Moreover, it suggests that teachers should provide a more interactive environment with choices for users to guide their own learning in their ESP courses. The results of this study confirm the usefulness of modules in interactive

hypermedia lessons in EFL learning. The design and development of ESP courses programmes should consider EFL/ESL students' characteristics. It is suggested that ESP practitioners should be aware of the profits that multimedia technology can bring to their curriculum and the benefit that multimedia can bring to the students' learning process by using strategies that can match all students' learning styles.

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