

# **The Use and Effect of Internet on Teachers and Students in Saudi Arabia**

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## **Abstract**

The Internet has emerged as the most visible component of the dynamic developments of information and communication technologies. It has also affected the field of education at all levels. In this paper, we report the effects of Internet in the field of education, particularly on teachers and students in Saudi Arabia. This is the first study on this topic in Saudi Arabia. For this research, we developed a questionnaire and collected responses against that. In this paper, we present the results and analysis of responses received.

## **1. Introduction**

With the emergence and continued growth of Internet, the ways that people work and learn are changing. Internet offers modern alternatives for creating, accessing, storing, distributing, and sharing information. This ease of access to information has been the primary driving force behind the unprecedented rate at which Internet technologies have been adopted and absorbed into society [1]. Naturally there has been considerable interest in their potential for education with special emphasis on the integration of constructive learning and distance learning over a Web-based platform [7]. Many studies and surveys have been conducted on Internet's use and its effects on education, at all levels, from schools [9], to higher education [1-3]. Most of these studies are localized for a particular region, which is understandable, as the complete study or survey for all regions is a huge undertaking [6]. Such regional studies require a complete knowledge and understanding of issues specific to that region's culture, religion, and tradition. Following the introduction of Internet in Saudi Arabia, a need arose to conduct such a study that would reflect the effects of Internet on the country in general, and on social, commercial, and educational sectors in particular. The purpose of such a study, the first of its kind in Saudi Arabia would be to guide policy-makers in decisions regarding new services, extending infrastructure, improve educational practices, etc.

In Saudi Arabia, Internet was first made available for public use in April 1997. Although with a slow initial start, its use and subscription has increased at a tremendous pace. User statistics for the last three years report 700,000 subscribers [5], a figure that is projected to increase rapidly in the future. However, this present number represents a small fraction (about 2.6%) of the total population [4]. Saudi Arabia is also one of the few countries where Internet use and contents are filtered to make it suitable for the society, and to maintain the cultural and traditional values. King Abdulaziz City for Science and Technology decided to fund a study to explore the use of Internet along three major avenues, namely, social effects of Internet on society, impact of Internet technology on education, and business uses of Internet [5].

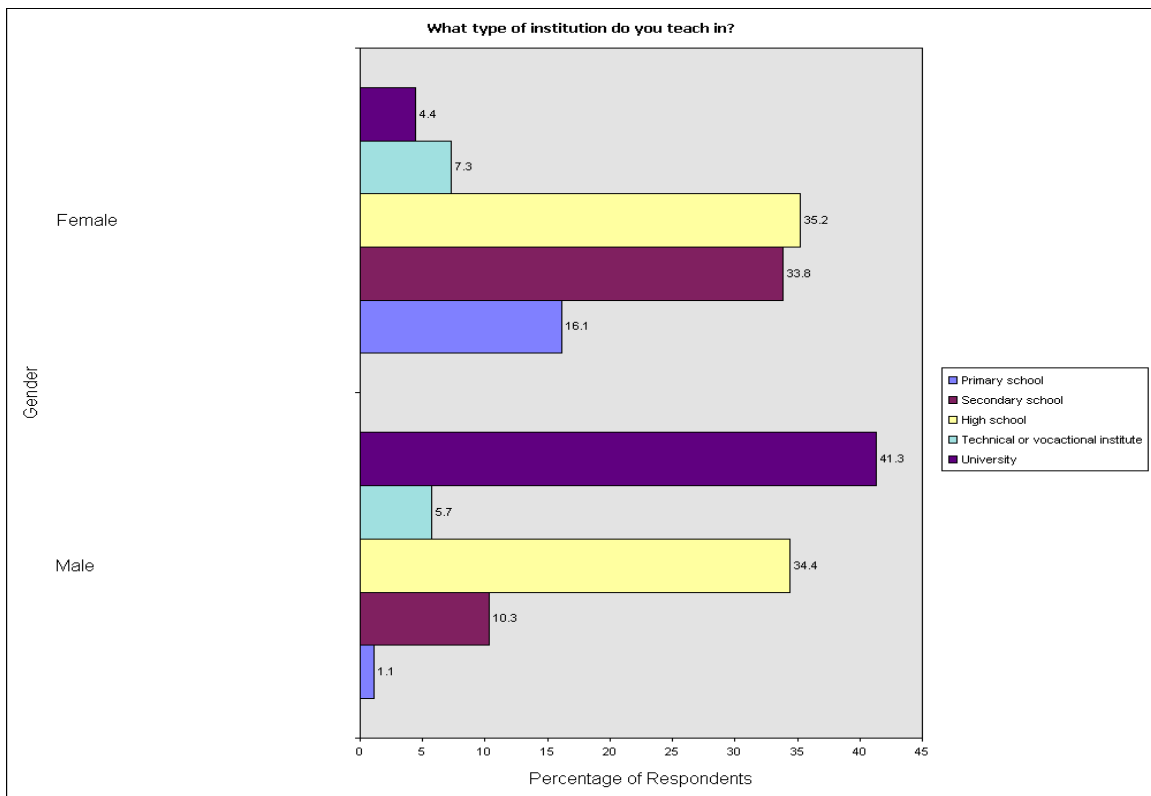
In this paper, we have focused our attention to study the impact of Internet on Education. A survey was initiated in April 2002 that solicited responses against a questionnaire. These responses were then analyzed for determining effects and trends. We have reported some findings as related to the effect of Internet on teachers and students.

This chapter is organized as follows. In Section 2, we briefly discuss the research methodology adopted. Section 2 provides the respondent profile. Sections 3 and 4 discuss trends being observed among the students and teachers respectively. In Section 5, we briefly mention about future work. A conclusion is given in Section 6.

## 2. Respondent Profiles

Since the survey was primarily focused on the effect of Internet on education, the responses were collected from teachers. 300 survey forms were sent out to teachers. 156 have responded to date. 56.2% of these respondents were male, while 43.8% were females. This categorization would especially be of significance, as the Kingdom of Saudi Arabia advocates and implements gender-based segregation. These teachers were further categorized based on certain factors, such as the type of institution they teach in and the language they teach in.

We first classify the male and females respondents based on their type of institution. Before proceeding, it would worth mentioning that the survey included respondents from different types of institutes. These included universities, technical and vocational training institutes, schools ranging from primary to high. These schools were local schools, as well as international schools.

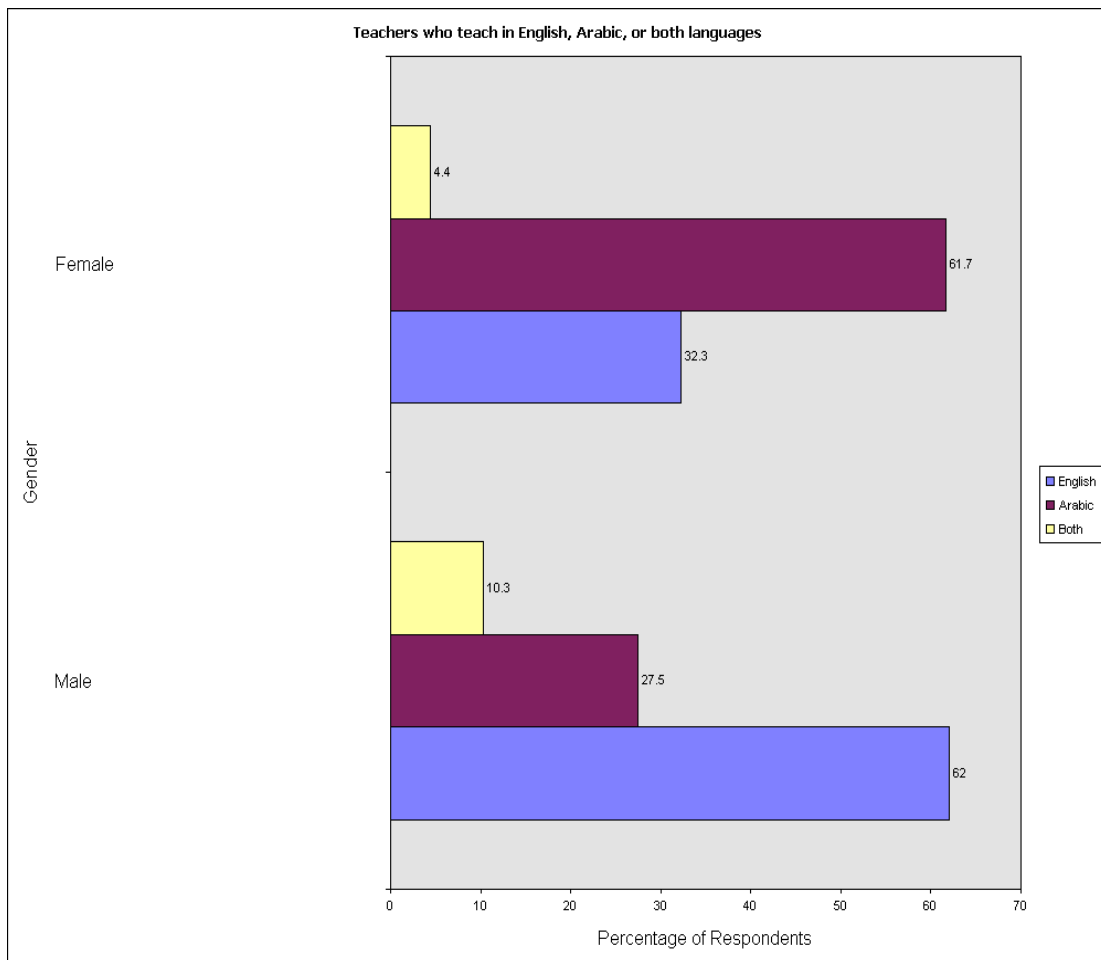


**Figure 1: Male and female teachers with type of institution they teach in**

In Figure 1, we see the classification of male and female teachers based on the type of institution they teach in. According to the figure, 41.3% male respondents teach in university, 5.7% teach in technical or vocational institutes, 34.4% teach in high schools, 10.3% teach in secondary schools, and 1.1% teach in primary schools. As for the females, 4.4% are university teachers, 7.3% are teachers in technical or vocational institutes, 35.2% teach in high schools, 33.8% teach in secondary schools, while 16.1% are teaching in primary schools.

Figure 2 classifies male and female respondent teachers based on the language they teach in. According to this figure, 62% males teach in English, 27.5% teach in Arabic, while 10.3% teach in both languages. These values can be attributed to the fact that a high percentage of males who took part in the survey are university teachers, where the medium of instruction is generally English, plus there are international schools that also use English in teaching.

As far as females are concerned, 32.3% teach in English, 61.7% teach in Arabic, while 4.4% teach in both languages. These numbers would make sense, since most of the responding female teachers are from primary, secondary, or high schools, where medium of instruction is Arabic. The 32.2% female teachers who teach in English could be from International schools, where the language of teaching is generally English.

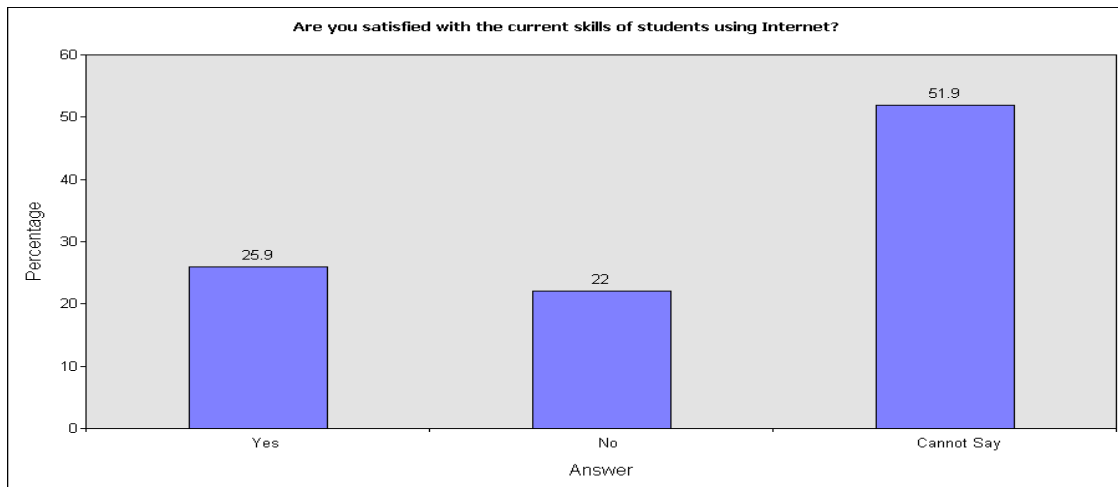


**Figure 2: Male and female teachers who teach in English, Arabic, or both languages**

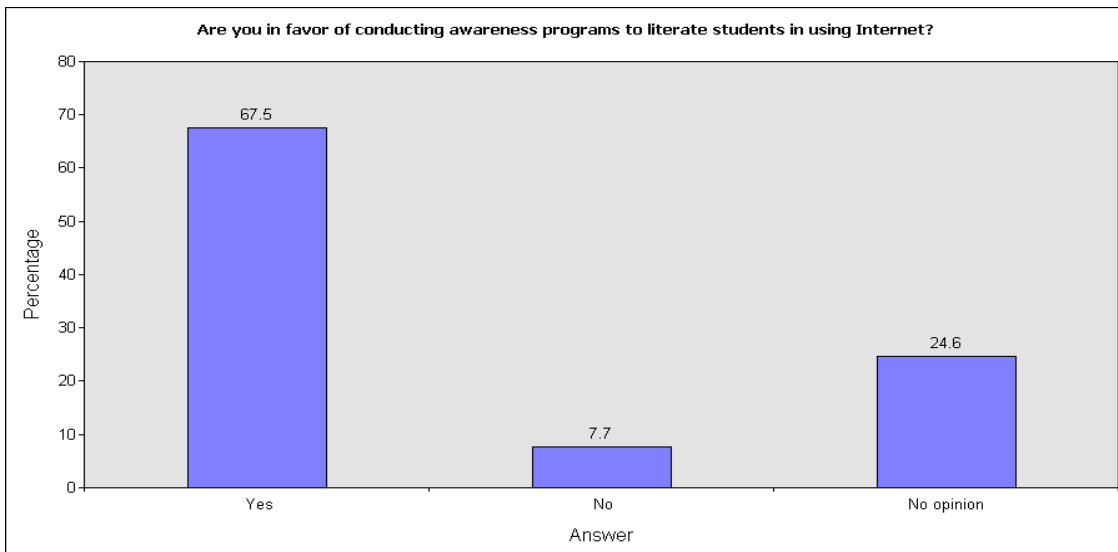
### 3. Effect of Internet on Students

As mentioned earlier, we approached different educational and vocational training institutions and collected responses from teachers and instructors. These responses were twofold: what do teachers think about the effects of Internet on their students and, what teachers think about the effects of Internet on themselves.

When asked if teachers were satisfied with their students' skills in using the Internet, 25.9% responded positively while 22% said that they were not. However the majority (51.9%) didn't hold an opinion. These results are illustrated in Figure 3. The reasons for this are primarily the absence or lack of emphasis on Internet education in schools. Most schools do not have a formal policy or orientation program for students that would introduce them to the educational benefits of the Internet thus helping them improve their skills. Also the absence of teacher-student discussions and interactions addressing this issue is a significant reason for lack of opinion among majority of teachers.

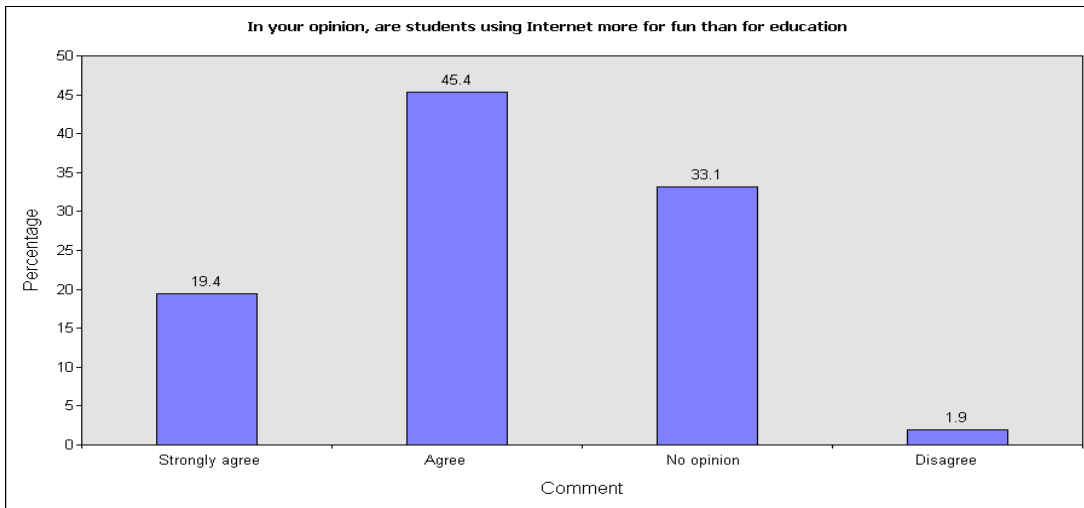


**Figure 3: Satisfaction with respect to Internet-using skills of students**

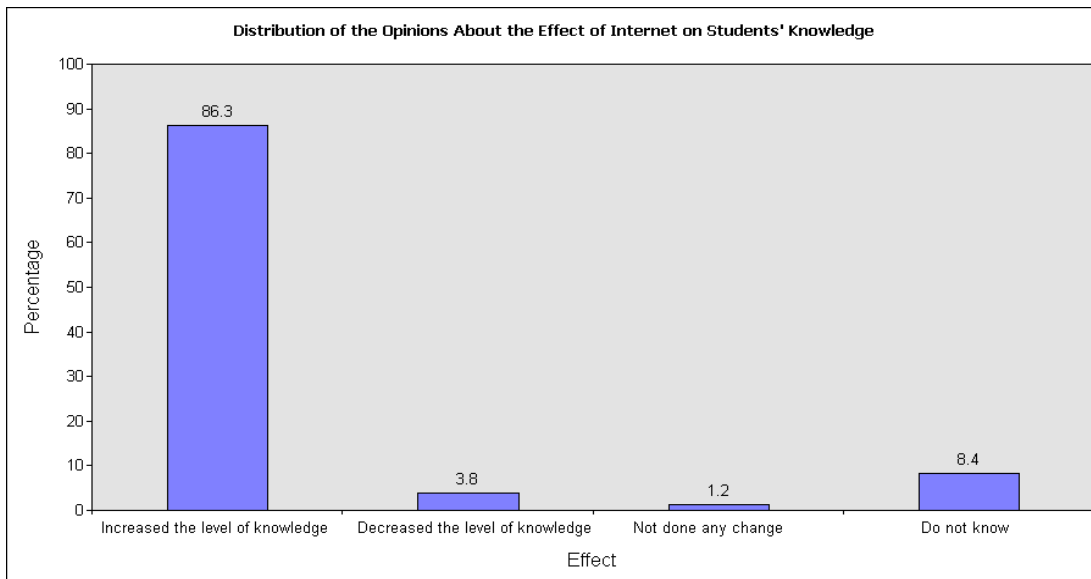


**Figure 4: Conducting awareness program to literate students in using Internet**

The above analysis concurs with the results shown in Figure 4 which queries whether teachers are in favor of conducting awareness courses to instruct students in using Internet for education. Here, 67.5% of teachers affirmed, while 24.6% had no opinion, and 7.7% thought that it was not needed. The large majority responding positively suggests that most teachers realize the need for school-level intervention and support. They understand the potential of the Internet for education and are aware that most students do use the Internet, but are not focusing on learning.



**Figure 5: Internet usage is more for fun than education**

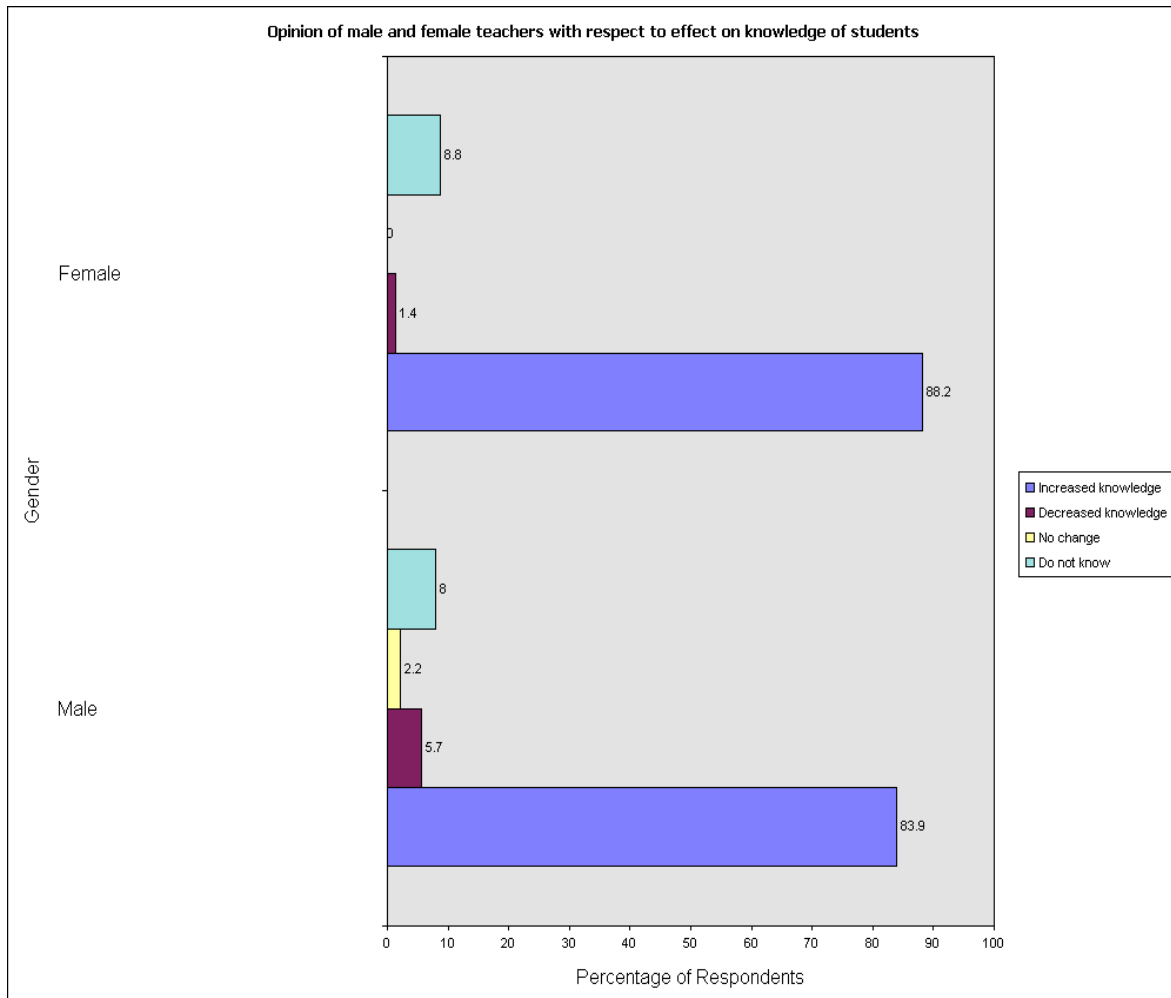


**Figure 6: Effect of Internet on students' knowledge**

Teachers were also asked if their students use Internet more for fun than for education. As reported in Figure 5, a total majority of 64.8% agreed to this, while about 33% did not have any opinion, with only 1.9% disagreeing. Surprisingly, although not shown in the figure, there wasn't a single response where the teacher had strongly disagreed with the statement. Again, this

supports the view that students need to have proper orientation in order to use the Internet in more constructive manner employing its vast educational benefits.

When asked whether the Internet has increased the knowledge of student (Figure 6), a clear majority (86.3%) answered in favor of this while 3.8% directly contended this believing that the Internet has taken a toll on the knowledge of students. A small minority (1.2%) said it has not done any change, while the rest (8.4%) said they did not know. So, the effect that we see is that the knowledge of a student has increased because of the Internet.

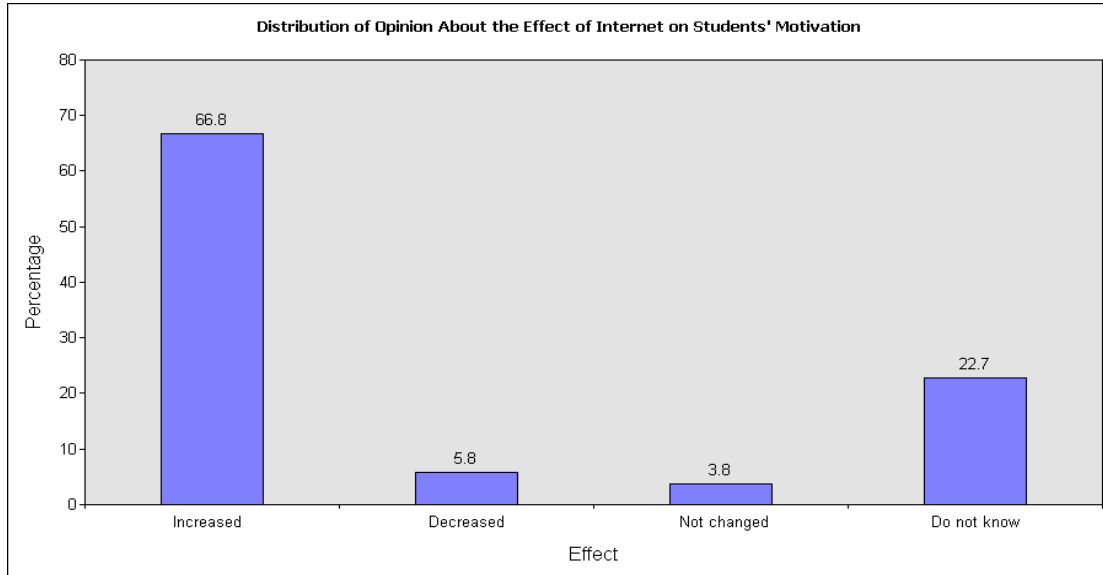


**Figure 7: Effect of Internet on students’ knowledge differentiated as per teacher’s gender**

If we categorize the responses based on male and female respondents to observe the effects of Internet on students’ knowledge, (Figure 7), we see that both male and female respondent teachers believe that Internet has increased the knowledge of students ‘very much’ (83.9% males and 88.2% females). An interesting observation is that female teachers have higher percentage than males in ‘very much’ category, depicting they have a bit stronger believe on this; although they do not seem to be much skilled about the Internet usage (Figure 10), yet they are aware of the positive effects of the Internet on students’ knowledge.

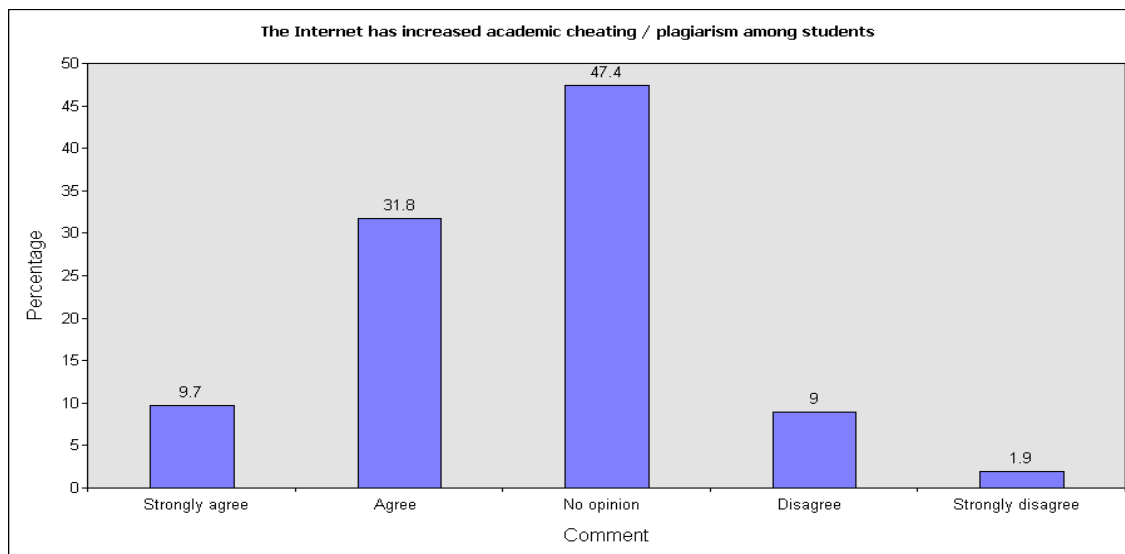
As far as students’ motivation is concerned (Figure 8), a majority of 66.8% believes that the

Internet has increased the motivation of students, while 5.8% think that the motivation has decreased. 3.8% say that they have not observed any change in the motivation, while 22.7% said they do not know about it. In general, the Internet has had a positive effect on student motivation, opening up the world and the vast range of opportunities and career-goals that can be pursued.



**Figure 8: Effect of Internet on students' motivation**

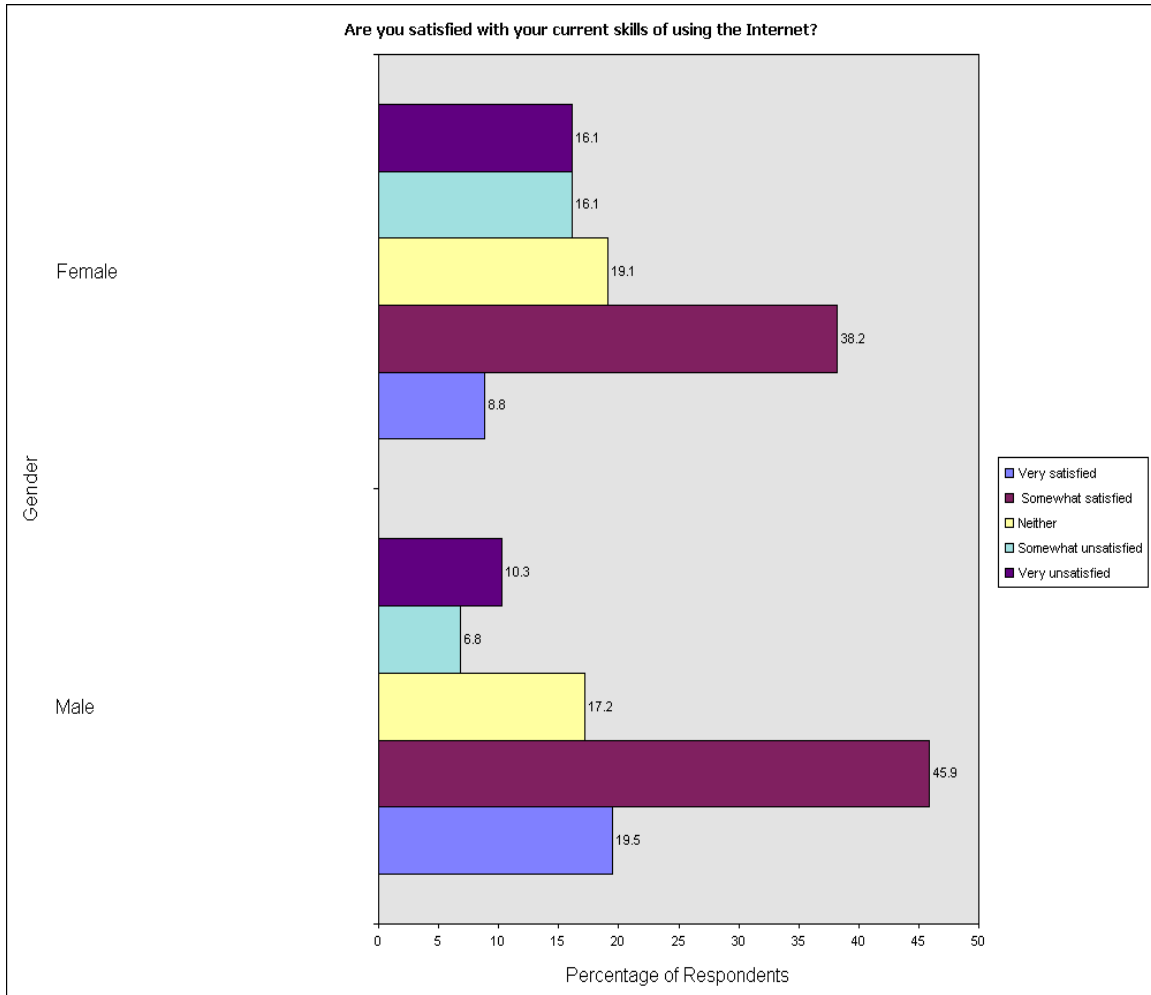
Plagiarism and unethical academic practices has always been a significant Internet related issue in education worldwide. When queried about this and its extent among students (Figure 9), 47.4% had no opinion. 9.7% agreed strongly with this, while 31.8% agreed to some extent. 9% disagreed to this, and 1.9% strongly disagreed. Collectively looking, it seems that Internet based plagiarism does exist and is slowly spreading among students, due to the obvious fact that he or she can easily access information, quoting it directly without getting noticed.



**Figure 9: Effect of Internet on academic cheating/plagiarism**

## 4. Effect of Internet on Teachers

In the survey, the teachers were also asked about the changes that the Internet has brought in their academic abilities and practices. The questions were focused on different aspects, results for some of which are presented below.

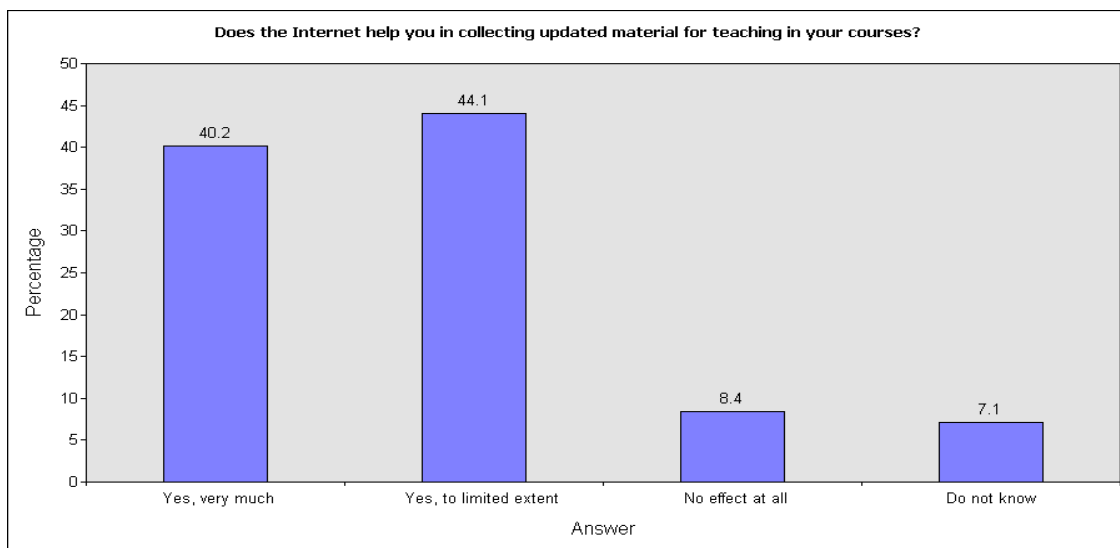


**Figure 10: Male and female teachers having satisfaction with their Internet usage skills**

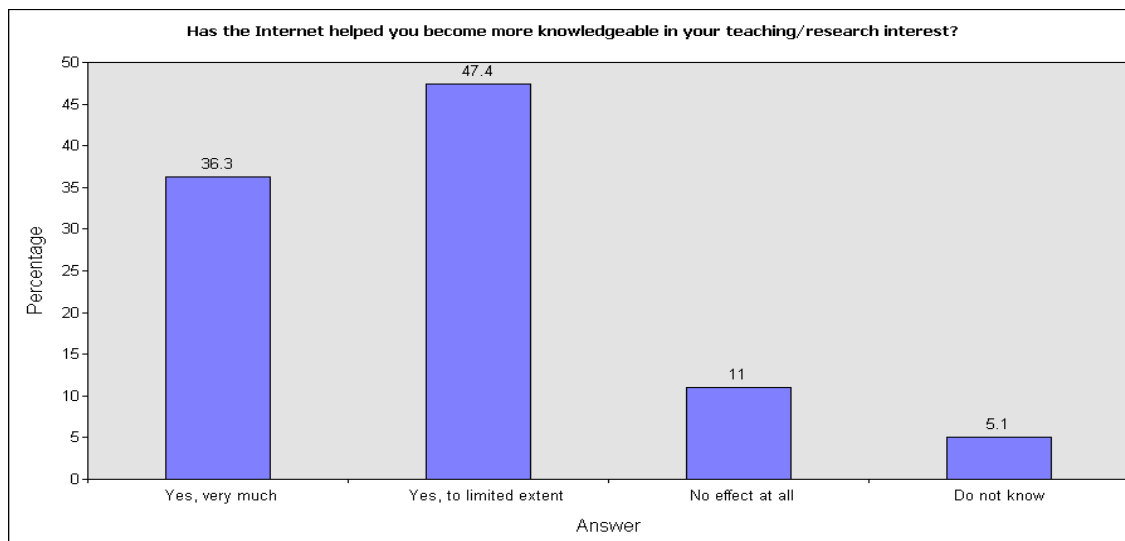
Figure 10 depicts the percentage of responses of male and female teachers with their Internet usage skills. According to this figure, 19.5% of male respondents are 'very satisfied' compared to 8.8% female respondents. 45.9% males and 38.2% females are 'somewhat satisfied'. 17.2% males and 19.1% females are 'neither satisfied nor unsatisfied'. 6.8% male respondents and 16.1% female respondents are 'somewhat satisfied', while 10.3% males are 'very unsatisfied', as opposed to 16.1% females. Collectively looking, male teachers seem to be more satisfied with their Internet skills compared to the females. The reasons could be that the male teachers have more options in using and accessing with Internet, for example, apart from their workplace, or, home, they can access it from public places such as internet café, while the female teachers do not have that much of liberty. Moreover, training/orientation opportunities for females are also limited.

When asked whether the Internet has helped them in collecting updated material for teaching in their courses (Figure 11), 40.2% of teachers affirmed that Internet had helped them significantly, 44.1% said that the Internet has done so, but to limited extent. Of the remaining, 8.4% do not think that there has been any appreciable effect, while 7.1% do not know. The responses show the trend that the teachers are using Internet for curricula development, for obvious reasons; they can get updated information on any topic they wish to teach.

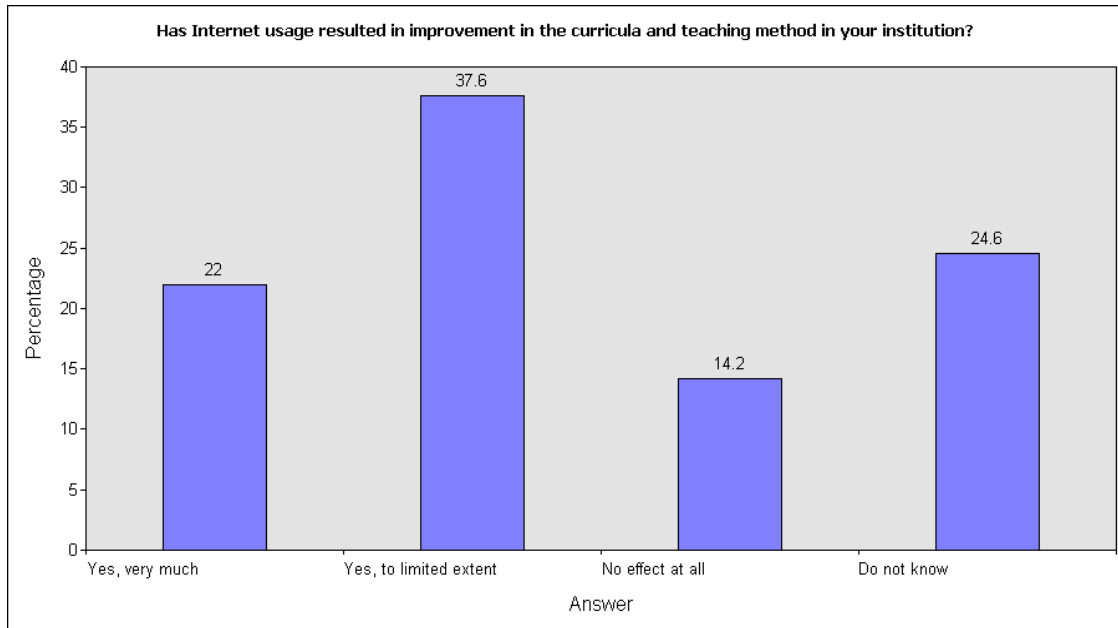
With regards to research (Figure 12), 36.3% of teachers said that Internet has helped them substantially in their research interests and in becoming more knowledgeable in their academic fields while 47.4% had benefited only to a limited extent. On the other hand, 11% said that Internet has not enhanced their knowledge, while 5.1% did not know about this effect. Thus, it can be generalized that the Internet has made a positive impact on the knowledge and research interests of teachers.



**Figure 11: Effect of Internet on collecting updated material for teaching**

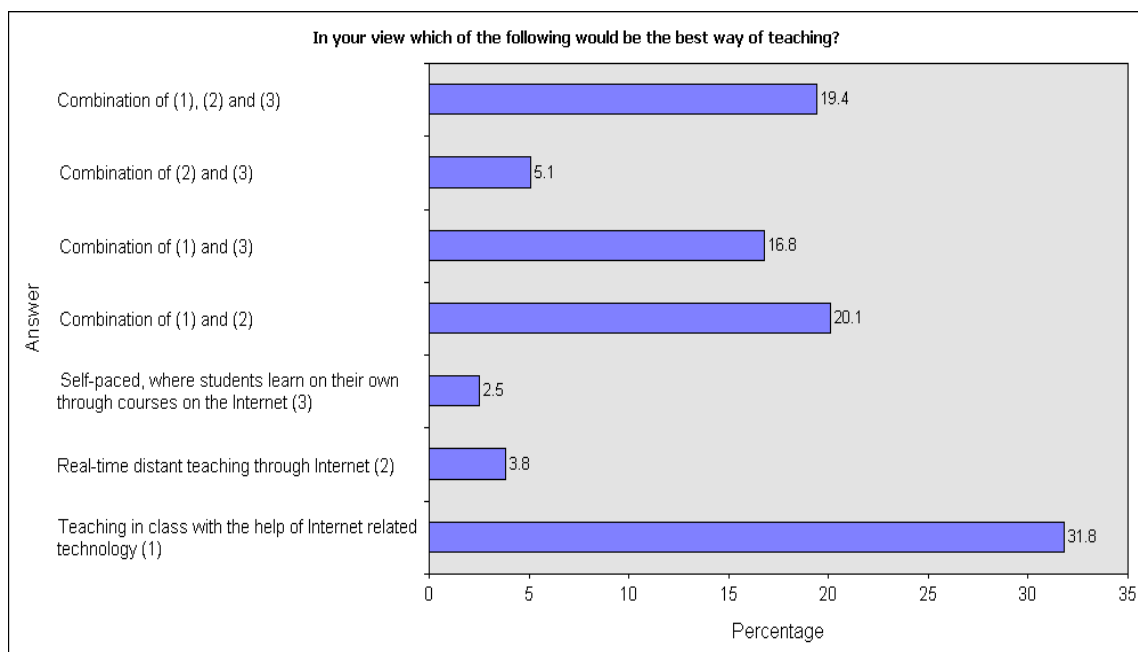


**Figure 12: Effect of Internet in increasing the knowledge of teacher**



**Figure 13: Effect of Internet in improving curricula and teaching method**

When the teachers were asked if Internet usage has resulted in improvement in the curricula and teaching methods in their institution (Figure 13), 22% said the Internet had helped them ‘very much’, 37.6% said Internet impacted positively in this regard, but to a limited extent while 14.2% of respondents claimed that the Internet had not had any effect with 24.6% responding with no opinions. The majority of teachers agree that the Internet does offer new and better methods of teaching, and this reflects the slow but growing trend among school managements to effectively use the Internet for student learning.



**Figure 14: The best way of teaching**

We asked teachers what, in their view, would be the best way of teaching (Figure 14). The given options were:

- (1) Teaching in class with help of Internet related technology.
- (2) Real-time teaching through Internet, where the students and the instructor are at different geographical locations.
- (3) Self-paced, where students learn on their own through courses on the Internet.

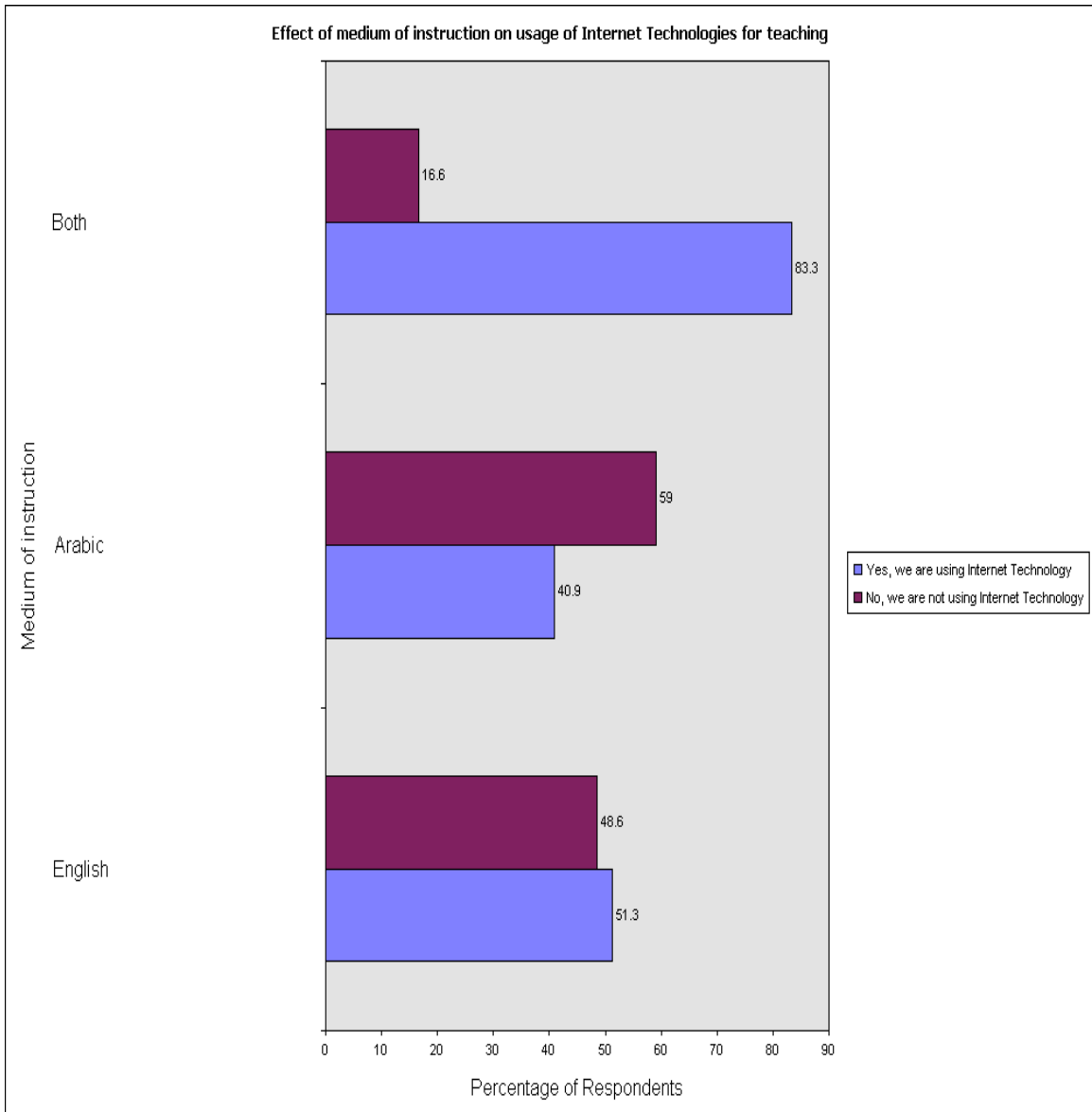
Different applicable combinations of these above techniques were also given as feasible options:

- (4) Combination of (1) and (2).
- (5) Combination of (1) and (3).
- (6) Combination of (2) and (3).
- (7) Combination of (1), (2) and (3).

The highest percentage - 31.8%, favored the first option. The next most feasible was option (4) - 20.1%, which basically advocates an extension of education beyond school. The next favorite choice was option (7), with 19.4%. This option represent a fully integrated learning environment where depending on student circumstances, such as distance and location, different techniques can be employed appropriately. Option (5), with 16.8% positive responses, represents supplementing traditional class teaching with web-based education, where class-related notes and supplemental tutorials can be posted for student reference. There were small percentages of teachers who opted for the remaining options. From these figures, an important observation is the understandable significance that is attached to option (1), i.e., 'Teaching in class with Internet related technology'. It is important that the teacher cannot or should not be completely eliminated; his or her physical presence and interaction with students is essential.

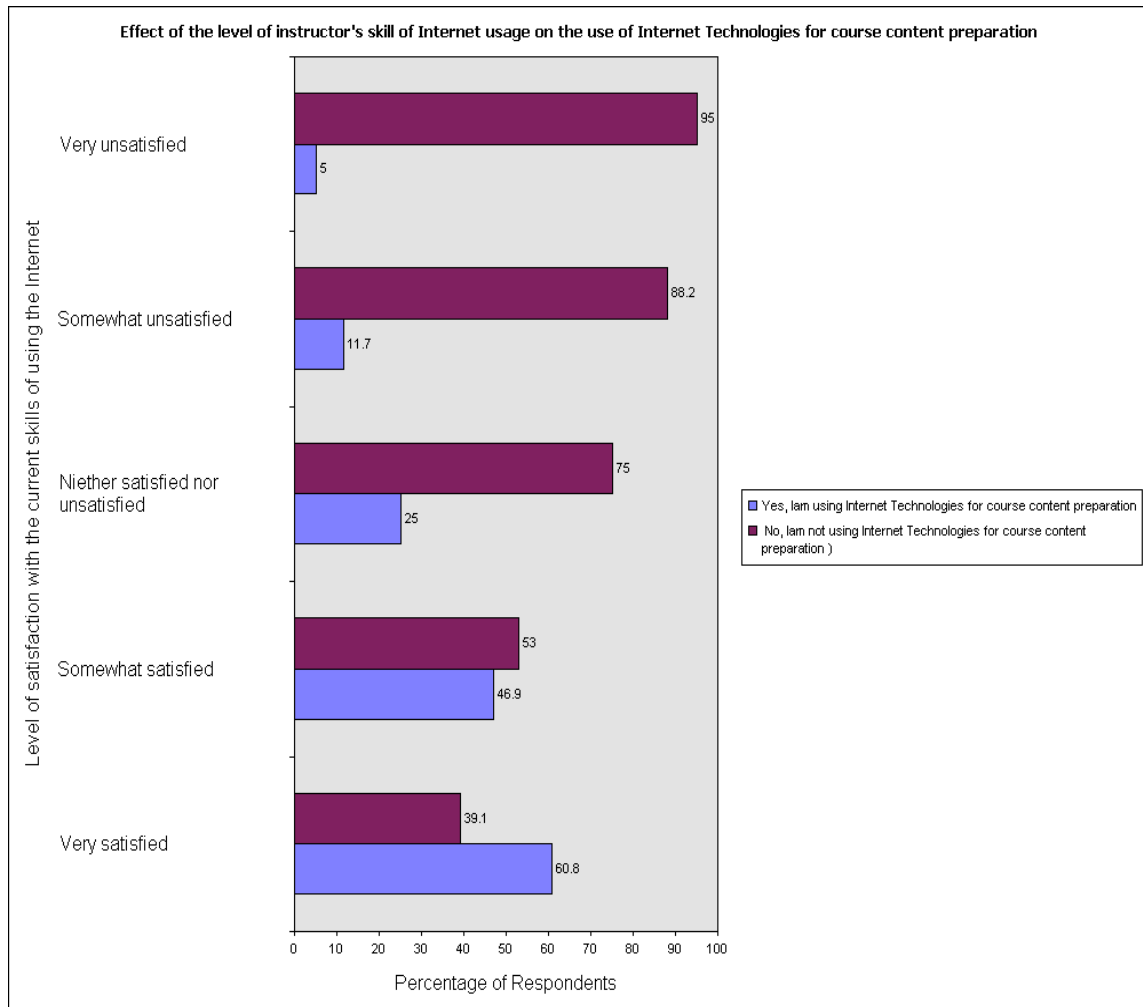
We also generated some cross-queries to observe how Internet has affected teachers. One such behavior is given in Figure 15, where we tried to find out the relationship between the medium of instruction used for teaching with the usage of Internet technologies for teaching. From this figure we observed that people who teach in English only are almost equal in using and not using the Internet technology for teaching. We see that 51.3% teachers who use only English for teaching use Internet technology, while 48.6% teachers don not use any such technology. With respect to teachers who teach in Arabic, the percentage of such teachers who do not use Internet technology in teaching is high (59%) compared to the ones who use it (40.9%). When we look at the teachers who use both languages for teaching, we notice that a very high percentage (83.3%) of these bilingual teachers use Internet technology in teaching, while a small percentage (16.6%) do not.

From these observations we come to know that teachers who teach in both languages have a higher probability that they use Internet technology in teaching, while teachers who teach in Arabic only have a higher probability that they will not use Internet technology in teaching. People who teach in English only fall between the above two categories.



**Figure 15: Effect of medium of instruction on usage of Internet technologies for teaching**

To see the effect of teachers' Internet skills in course content preparation using Internet technologies, we plot the bar graph in Figure 16. As would be expected, the highest percentage of teachers who use Internet technologies in course content preparation are the ones who are very satisfied with their Internet usage skills. This percentage decreases to 46.9% for teachers who are 'somewhat satisfied' with their Internet skills, and becomes 25% for teachers who are 'neither satisfied nor unsatisfied'. Only 11.7% of teachers who are 'somewhat unsatisfied' with their Internet skills use Internet technology in teaching. Finally, only 5% teachers who are 'very unsatisfied' with their Internet skills use Internet technology in teaching. The trend clearly points to the fact that teachers with lesser skills on Internet usage are hesitant in using any such technology in their teaching.



**Figure 16: Effect of Internet usage skills of teacher on the use of Internet technologies for course content preparation**

## 5. Future Work and Trends

From the survey, we collected information about the gender of the respondents, the language they teach in (Arabic, English, or both), the geographical area they teach in (e.g. city, town, or village), type of institution they teach in, etc. Apart from this information, they also responded to some technical questions such as whether their institute is connected to the Internet, and if yes, what type of connection it is, and whether they are currently using any Internet related technology in teaching. We have presented some of these relationships in this report, and are currently working on more relationships among these parameters and the ones described in this paper by generating cross queries between different questions for further analysis.

It should be noted that the results presented are very much dependent on responses from university instructors and faculty (41.3% of the total respondents). Therefore the trends shown above may significantly reflect the opinions of these teachers, and not necessarily the overall general trend. To achieve a broader view, category-wise analysis of teachers is required, which is an ongoing task.

The results and views that have been reported here reflect the present nascent status and involvement of the Internet in education. The trend is definitely poised for change, with major projects already underway. A significant mention here would be the WATANI program [8], which foresees developing a Kingdom-wide school network, achieving ubiquitous education and enriching learning through multimedia-based interactive methodologies.

## 6. Conclusion

In this paper, results of a survey on the use and effect of Internet on teachers and students in Saudi Arabia are presented. The results suggest that, in general, most teachers do agree with the potential of the Internet for education and realize the effort involved in effectively utilizing this valuable resource. As a measure against the present low Internet-skill levels of most students, they support emphasis on awareness and training programs. Although it is clear that the Internet does increase student understanding and motivation, the problem of plagiarism and unethical practices does exist. To deal with this, emphasis should be laid on effective deterrents such as having a clear picture of what is ethical and what isn't as well as fines and penalties.

As far as teachers themselves are concerned, majority of them think that the Internet has helped them in collecting updated material for teaching in their courses, and that the Internet has enhanced their knowledge as far as teaching and research interests are concerned. They also believe that the Internet has facilitated in improving curricula and teaching methods. But nevertheless they do emphasize on the need for new methods to be supplemental to traditional classroom teaching and not as a replacement. Moreover, teachers who are strong with their Internet usage skills are more likely to use Internet technologies in course content preparation.

## Acknowledgements

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