

Distribution of responsibility in postgraduate supervision as seen from both sides: a questionnaire-based study

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Introduction: setup and objectives

We present a questionnaire-based study of responsibility in postgraduate supervision as viewed from two opposite sides: students and supervisors at the Institute of Physics and Technology, UiB. The study had a two-fold objective: First, we aimed to analyze the prevailing expectations concerning the following question: “who should shoulder the bulk of responsibility when it comes to supervision on the postgraduate level?” Questionnaire regularly filled during stage one of the “Forskningsveiledning” course (a part of Universitetspedagogikk) was chosen as a tool. Our second goal was to gauge the aptitude of questionnaire itself for specific situations, conditions and challenges of scientific supervision in the field of natural sciences, in this case, physics.

We did not call on any formal authority to aid with the study, both supervisors and students were free to decline or not to fill in the forms they were handed. Thus we should note that most of the respondents demonstrated enthusiasm and genuine involvement in issues raised by the study, with the degree of interest even more evident in supervisors and PhD students. To quote one of the professors, “each point really deserves at least half an hour’s discussion on its own”.

It should be pointed out that responsibility itself is very much a subjective matter; the same responsibility degrees chosen by different respondent groups might amount to different levels of actual burden. But given that all respondents belonged to the same institution, it was our belief that our findings accurately reflect at least the relative distribution of responsibility.

Results and discussion

After handing out the questionnaires, we have received responses from 11 (out of 33 professors and associate professors), 15 PhD students, and 17 master students. All in all, we believe the number was sufficient to represent the views and attitudes of parties involved in the process of supervision at the postgraduate level.

The first development came to light when a clear majority of supervisors emphasized that the difference between master and PhD students was so great that they needed two forms to fill instead of one. Who delved into his memories as a master student to outline the shifting of responsibility occurring when one takes advances on the road to becoming an independent researcher.

With this distinction in mind, we have drawn comparisons between the attitudes towards various aspects of responsibility expressed by master and PhD students themselves (figures denoted by subscript “a”, and did the same for supervisors’. Figures denoted by subscript “b” put side by side the supervisors’ views about the balance of responsibility in the case of master and PhD students, while figures denoted by “c” and “d” highlight the difference in opinions between supervisors and master and PhD students, respectively. Bins used to obtain distributions in all the figures correspond to the “Supervisor-Student” axis in questionnaires. When the responses of two different groups are plotted on a single chart, numbers are normalized for one of the groups.

“Selection of student’s research topic”

When it comes to selection of research topic, the prevailing opinion in both student groups cannot be summed up by the “supervisor knows the subject best”. This comment, made by one of the PhD students, was clearly a minority opinion. An alternative view from a master student pointed out the research topic should be a part of an ongoing activity, and thus completely the supervisor’s responsibility. This viewpoint can be more prevalent in applied-science and technology oriented educational institutions where student choices are necessarily restricted by equipment and other facilities available. Still, Figure 1 proves that both master and PhD students are prepared to actively contribute, and in the case of master students, share the responsibility for choosing their research topics. Figure 1a indicates that master students as a whole wanted a greater degree of responsibility than doctoral candidates. One might speculate that on top of the youthful bravado, there exists a bit of an “anything goes” attitude when it comes to a master topic selection; choosing a topic of a doctoral thesis comes with heavier consequences and thus implies much larger responsibility on the supervisor part. These opinions were not matched by those of the supervisors, whose views suggested a significantly higher degree of responsibility on the supervisor’s part even in case of PhD students, while assuming the bulk of the responsibility for master thesis topics.

“Establishing the theoretical framework for the thesis research”

No large surprises were encountered when it came to opinions about who should be in charge of establishing the theoretical framework for thesis research. Attitudes reflected in Figure 2 show that all respondents place the burden squarely on the supervisor shoulders, though it also appears (Figure 2 c) that master students would like to be more involved in this topic than expected by their supervisors. The views of doctoral students were closely matched by those of the supervisors.

“Identifying a program of background reading or study for the student”

Figure 3a shows that master and doctoral students largely share the attitudes to responsibility in identifying the program of background reading or study. They expect to be somewhat involved but main responsibility remains with the supervisor. Meanwhile, the supervisors’ view of the responsibility differs drastically in case of master and PhD students. The majority of supervisors believe that this issue falls square into their domain of responsibility when it comes to the master students, in contrast to opinions expressed by the master students themselves. When it comes to doctoral students, this topic was also one of few where the supervisors expect a higher degree of responsibility than the doctoral students are prepared to assume themselves (Figure 3d).

“Developing a schedule for completion of tasks that the student will undertake during the degree”

Developing a schedule for completion of tasks to be undertaken was a topic where the majority of all respondents in all the three groups lean towards cooperation and a 50-50 sharing of responsibility, with PhD students tending to assume less responsibility than master students. Still once again, a number of master students believe that responsibility belongs more them than their supervisors. The situation is reversed in case of the doctoral students, where a significant number of supervisors expect the doctoral students to take on more responsibility than the supervisors, a view not shared by students themselves.

“Organizing regular meetings between student and supervisor”

The views of master and doctoral students largely coincide on this topic (Figure 5a), with just a few master students willing to abdicate all responsibility for this to their supervisors

(opinion shared by none of PhD students). On this issue as well, the supervisors are expecting a more responsible attitude from the PhD students than from master students, while quite the number of master students want more responsibility than they will be given, and doctoral students, less.

“Making the student aware of facilities and resources in the department and university”

Figure 6a shows that though master and PhD students agree in general on the distribution of responsibility for making the student aware of facilities and resource in the department and university, the exact degree of expected responsibility is higher on the part of the PhD students. Both groups believe that the bulk of responsibility belongs to the supervisors, and this view is shared by the supervisors themselves. Moreover, as demonstrated in Figures 6c and 6d, the supervisor opinions closely matched those of two different student groups. An interesting development worthy of consideration was the mention of a possible third party, “studiekonsulent”, named as a possible resource in this context by some students.

“Preparing the student for public presentation of research ideas or results”

The opinions of both master and PhD students on the topic of preparing the student for public presentation of research ideas or results were more or less equally distributed between “shared responsibility” and “main responsibility lies with the supervisor but student must assume a share of responsibility as well” (Figure 7a). We should draw the attention that one PhD student and one supervisor expected the student to be completely responsible for this issue, a somewhat unrealistic expectation in our opinion. Master students are prepared to share the responsibility on this issue to a larger degree than their supervisors, and there exists a general consensus between doctoral students and their supervisors on who should be the one responsible.

“Providing resources that will support the student’s research”

Attitudes towards responsibility in providing resources that will support the student’s research are reflected in Figure 8. They show that both student groups have similar views (Figure 8a), while there exists a mismatch in expectations between students and supervisors regardless of the degree level. The bulk of surveyed supervisors consider the resources their sole responsibility without expecting anything from the students (Figures 8c and 8d). The students clear wanted a bigger involvement. Some of the respondents indicated that students are expected to actually make equipment for their research.

“Developing a network of fellow students or staff for the student”

Opinions reflected in different subplots of Figure 9 show that the issue of developing a network of fellow students or staff caused fairly diverging responses, especially among the students. The student views vary from “shared responsibility” to “main responsibility lies with the student” (Figure 9a). Some of the students have also pointed this issue as an integral part of “Providing emotional support and encouragement for the student”. It was also stated that when it comes to fellow students, it is more a student’s responsibility, but stated that “contacts with staff” is more of the “supervisor responsibility”. Supervisor attitudes were slightly more uniform, with the PhD students expected to share the responsibility with the supervisors, and master students to have a significant degree of involvement as well. A significant number of master students share the supervisors’ views on this topic, though some of the students are prepared to take almost or all responsibility. When it comes to PhD students, supervisors expect more shared responsibility, while the students themselves are apparently willing to take a backseat to the supervisors.

“Ensuring that the student’s program is on track and on schedule”

Opinions on who should be responsible for ensuring that the student’s program is on track and on schedule showed a broad distribution (Figure 10). The opinions covered the range from “complete responsibility of supervisor” to “complete student’s responsibility” in all the three respondent groups with a sole exception of supervisors’ attitudes towards master students (Figures 10b and 10c).

“Providing emotional support and encouragement to the student”

Not surprisingly, this topic gave rise the largest number of comments, emphasizing the relevance of this issue. The student comments varied from, “Especially important for students new to the city who don’t have an existing social network or have problems with building up one” to “This is very important for all students. The first presentation is very scary for most of the students and especially if friends and family live far away. They need good relationships, support and encouragement. Students are not machines!” Once again, the master students believe themselves to be more self-sufficient than doctoral students; a not-so-insignificant number of them consider emotional support and encouragement to be mostly their own responsibility

Figure 11b shows that supervisors did not differentiate between master and doctoral students when it comes to emotional support. More than half of the supervisors are prepared to shoulder the entire burden themselves; those who placed certain degree of responsibility on the student indicated that the “student must ask for help”. None of supervisors were prepared shift the bulk of responsibility onto students, in a stark contrast with some master student attitudes. Given the vast experience of the supervisors, one expects that the actual needs of master students are more extensive than some of them might think, and foresee that their attitude may result in future problems.

We would also like to point out that given the special importance placed on emotional support and encouragement by many respondents, the questionnaire itself might be too general and should be supplemented by at least one issue of paramount importance to future scientists: not just emotional support but fostering pride in the scientific tradition (started by Bjørn Trumphy in case of the Institute for Physics and Technology). This sense of belonging to something much larger than you but something you can both contribute and influence in return can be of great help when it comes to motivating students and supervisors both. This might most relevant for master-level students since students admitted to doctoral programs would have generally absorbed the spirit by a kind of “osmosis”.

“Maintaining an effective working relationship between supervisor and student”

As demonstrated in Figure 12a, most of the students consider maintaining an effective working relationship to be a two-way street, with responsibilities shared alike by student and supervisor. The majority of supervisors were of the same opinion when it came to doctoral students, though at least a fourth of them consider it their sole responsibility (Figure 12b). As before, the number of supervisors prepared to take the bulk of responsibility for master students is much higher than for the doctoral candidates, and once again, master students showed a desire more responsibility than generally allotted by supervisors. Situation were reversed in the case of doctoral students

“Ensuring that the thesis will be of acceptable standard when examined”

As indicated in Figure 13c, ensuring that thesis will be of acceptable standard when examined proved one of the few issues when a number of supervisors expected more responsibility than the master students themselves were prepared to assume.

“Ensuring that the current research literature has been identified and read by the student”

As it appears from Figure 14a, master students demonstrated a much broader distribution of opinions on who should ensure that the current research literature has been identified and read by the student than doctoral students. Moreover, while the PhD students tended to view this responsibility as something to be shared equally between supervisor and student, the master student attitudes are skewed towards a greater student responsibility. And according to Figure 14b, supervisors themselves hold fairly diverse views on the subject as well when it comes to master students (Figure 14 c). In contrast to that, the views of PhD students were more closely matched by those of the supervisors.

Paradigms encountered and some questions

Conducting the study and then analyzing its results, we encountered several different attitudes to responsibility sharing between a student and a supervisor. We found that those sometimes dramatically different views were not a generational thing but constituted more of a deeply held personal conviction. Supervisor opinions varied from allowing at least the doctoral students a certain share of responsibility (2 and 3 or even 4 on some topics) to an attitude that can be described as guru-disciple paradigm or, more precisely, “benevolent despotism”. To quote a professor respondent, “Supervisor has the total responsibility for his students”.

One would imagine that for a PhD student to develop into an independent researcher under the latter paradigm would require a postdoctoral stint at another university, preferably abroad. But given that the student will be sent to a carefully chosen and reliable scientific ally, how large is the increase in self-sufficiency and independent thinking one can expect from this arrangement?

Conclusions

We have used the form “as is”, and can conclude that though it currently suffers from being too general (intended for humaniora, natural sciences, mathematics, and medicine), we believe it can readily be adapted to specific needs of natural science environment by including several more topics and modifying the existing ones to reflect large responsibility differences between master and PhD supervision.

Our study has revealed a degree of mismatch in expectations within the three respondent groups. Master students, PhD students, and their supervisors hold with the degree of mismatch varying with the topic.

On quite a number of issues, the supervisors are expecting a more responsible attitude from the PhD students than from master students, while a significant number of master students want more responsibility than they will be given, and doctoral students, less responsibility. This perceived shift towards diminished responsibility in doctoral students might be an unintended result of their previous experiences as master students.

Acknowledgements

This study would have been impossible without the enthusiastic response of both faculty and student body at the Institute of Physics and Technology, University of Bergen. The author expresses her gratitude to all of them.

Figure 1. Distribution of responsibility in selection of student’s research topic: comparison of attitudes of different respondent groups. “1” stands for “All responsibility belongs with the supervisor”; “More”, for “The student is completely responsible for this”. Numbers on the vertical axis indicate the number of respondents choosing the option (not normalized).

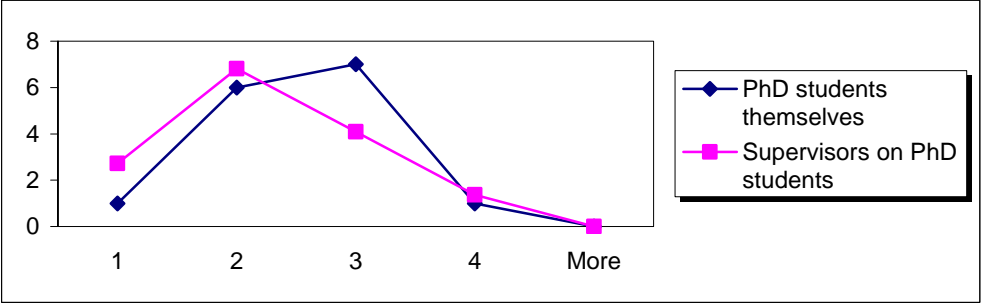
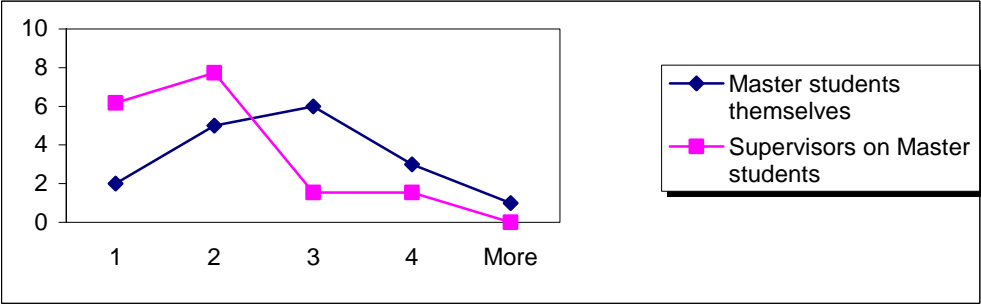
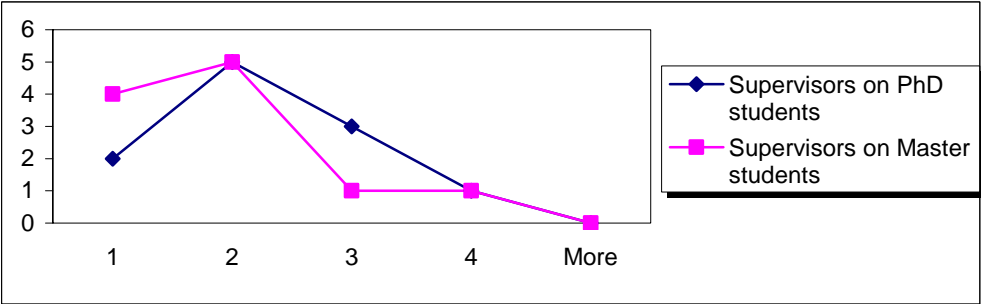
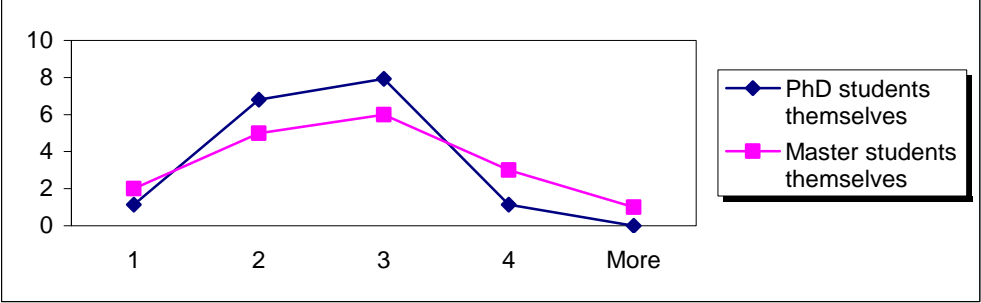


Figure 2. Distribution of responsibility in establishing the theoretical framework for the thesis research: comparison of attitudes of different respondent groups. See caption in Figure 1 for the notations.

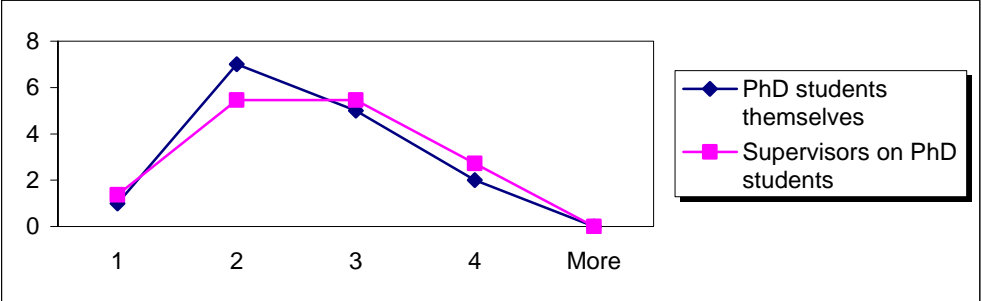
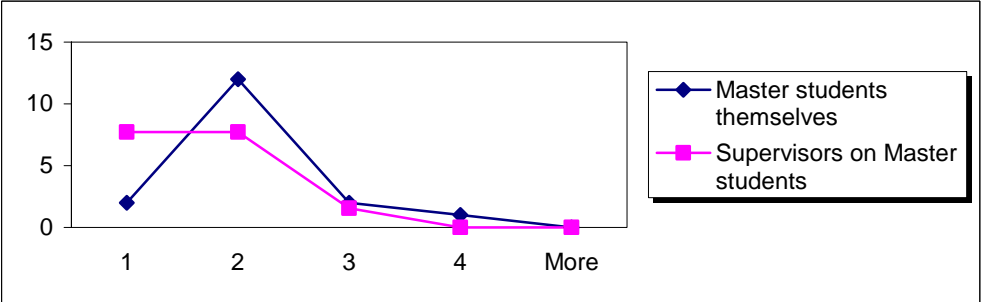
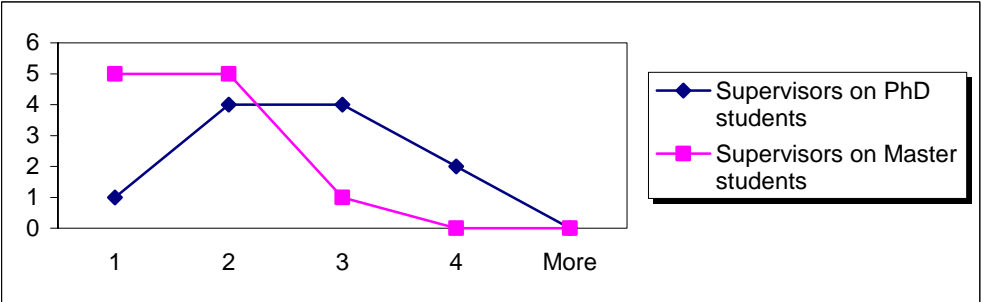
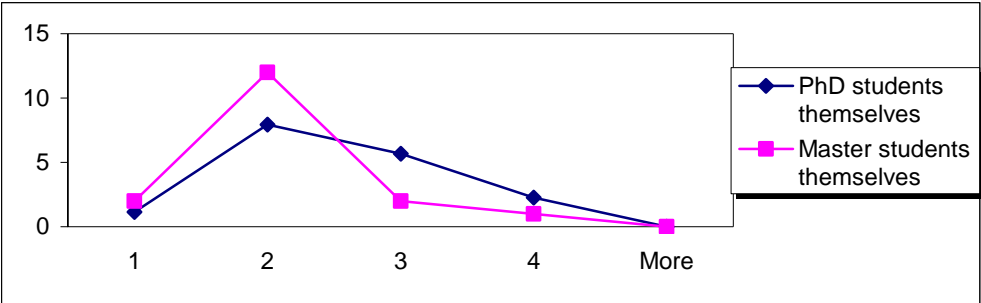


Figure 3. Responsibility in identifying a program of background reading or study for the student: comparison of attitudes of different respondent groups. See Figure 1 caption for the notations.

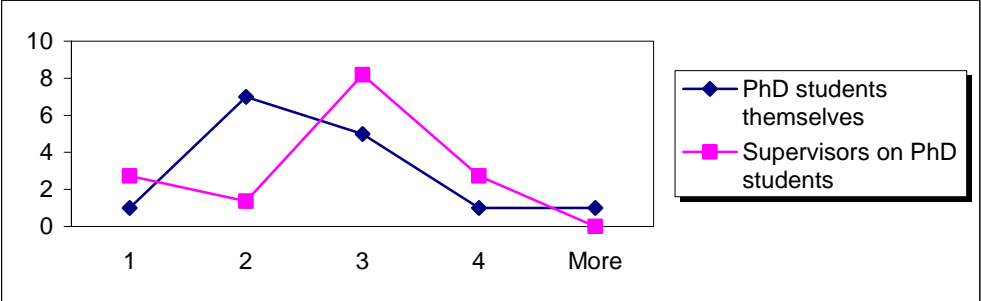
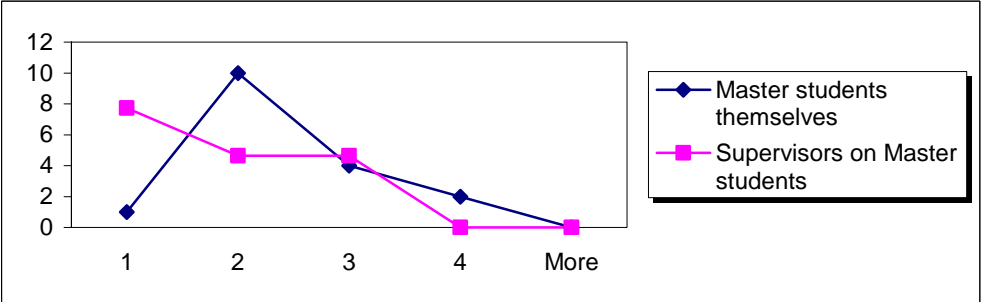
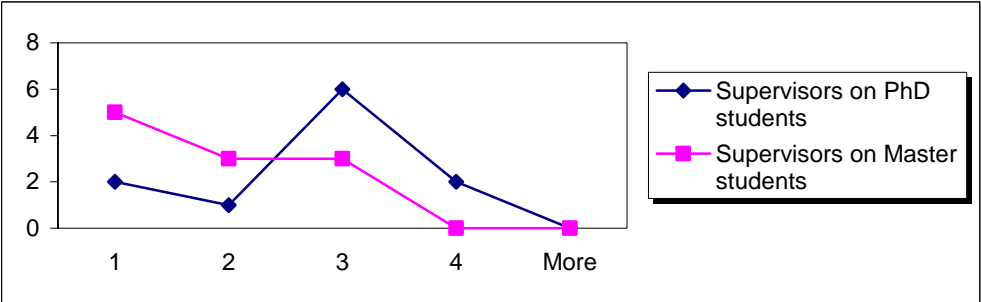
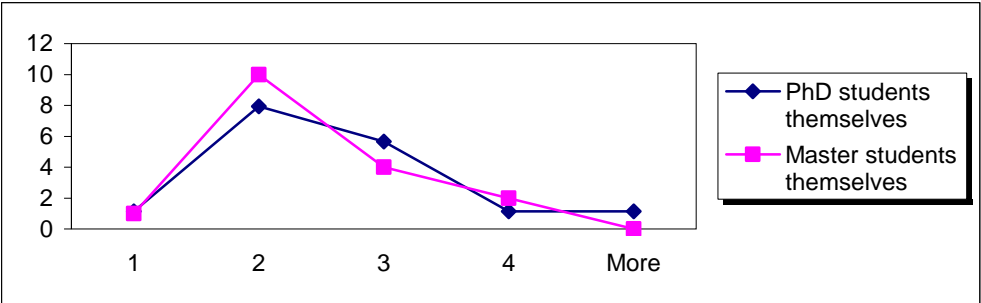


Figure 4. Responsibility in developing a schedule for completion of tasks that the student will undertake during the degree: comparison of attitudes of different respondent groups. See Figure 1 caption for the notations.

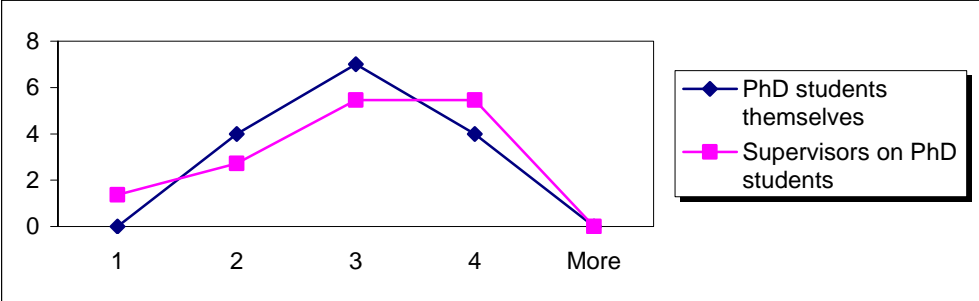
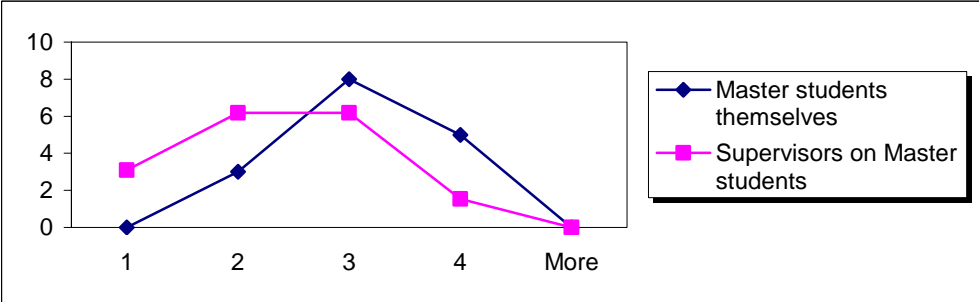
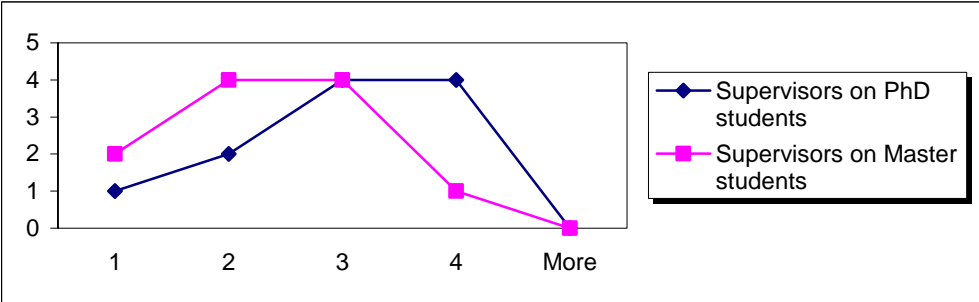
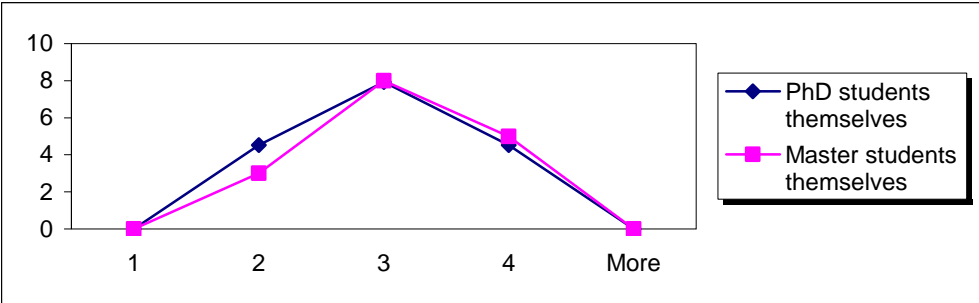


Figure 5. Responsibility in organizing regular meetings between student and supervisor: comparison of attitudes of different respondent groups. See Figure 1 caption for the notations

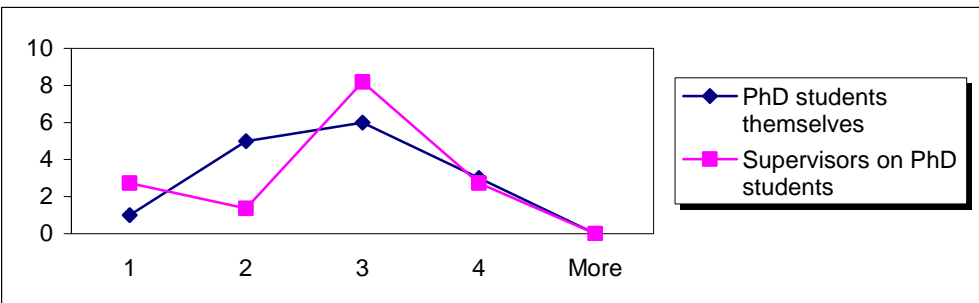
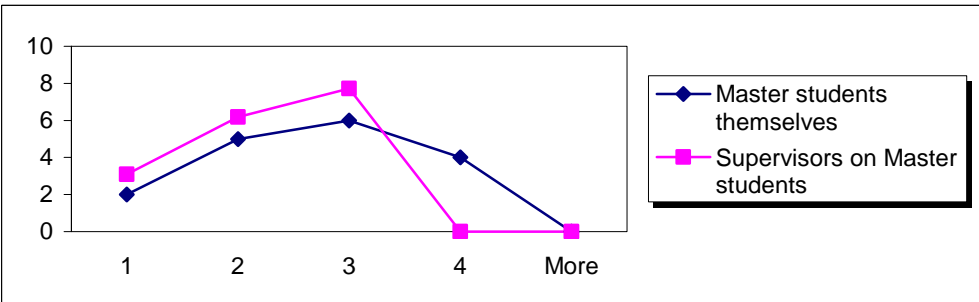
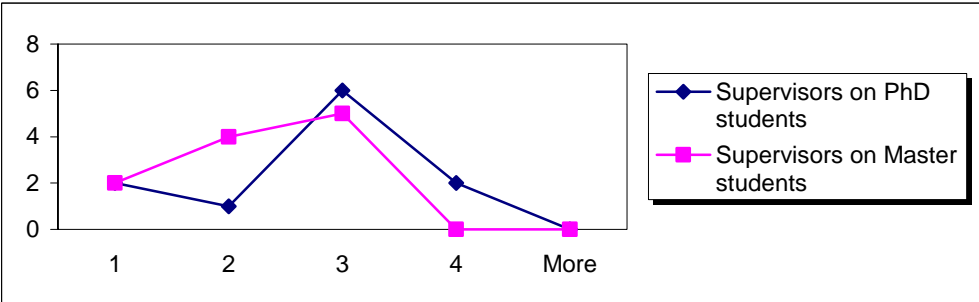
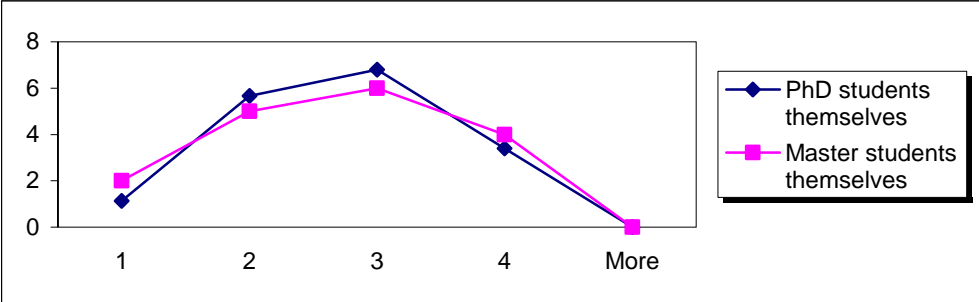


Figure 6. Responsibility in making the student aware of facilities and resources in the department and university: comparison of attitudes of different respondent groups. See Figure 1 caption for the notations.

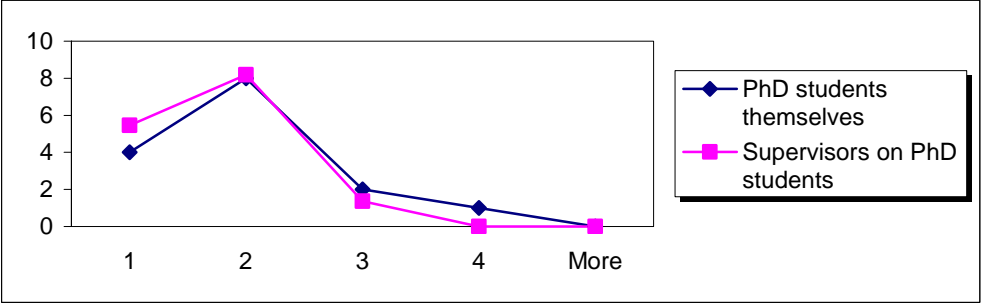
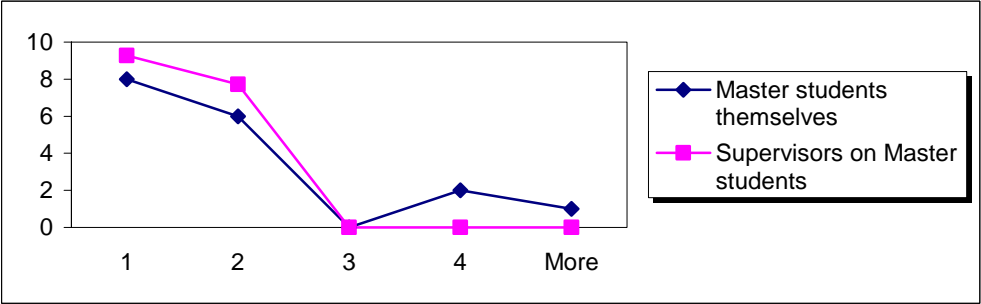
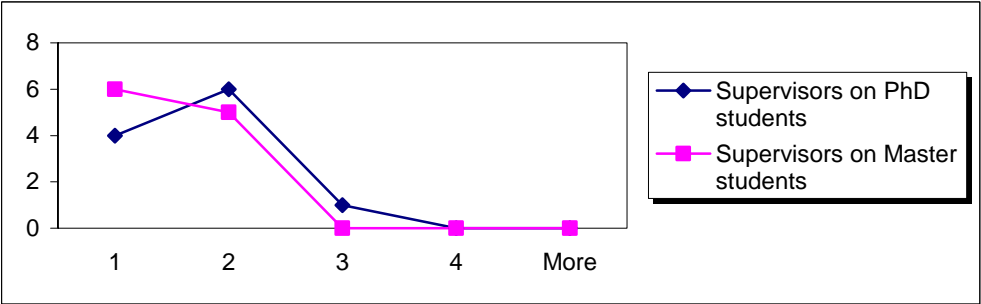
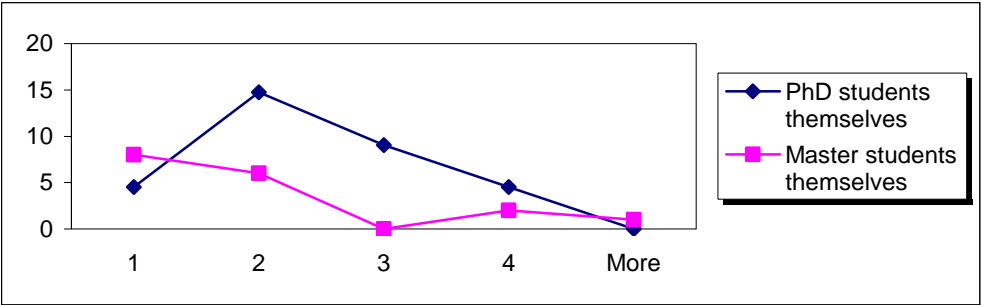


Figure 7. Distribution of responsibility in preparing the student for public presentation of research ideas or results: comparison of attitudes of different respondent groups. See Figure 1 caption for the notations.

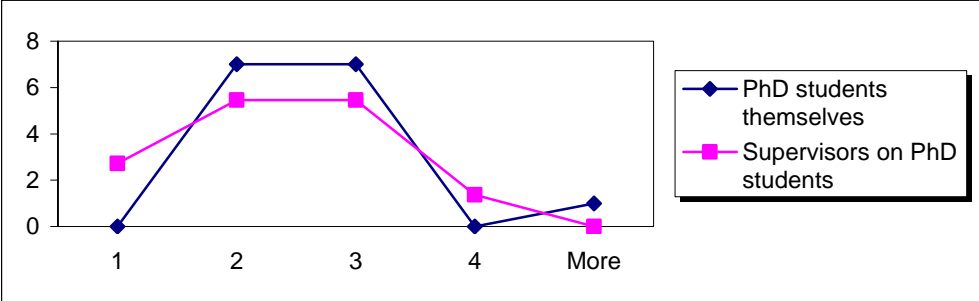
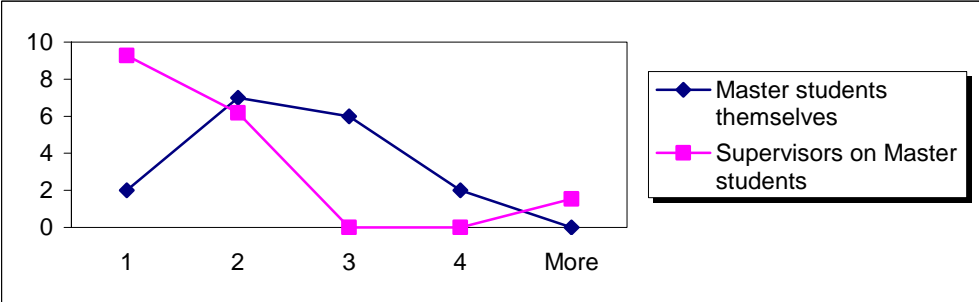
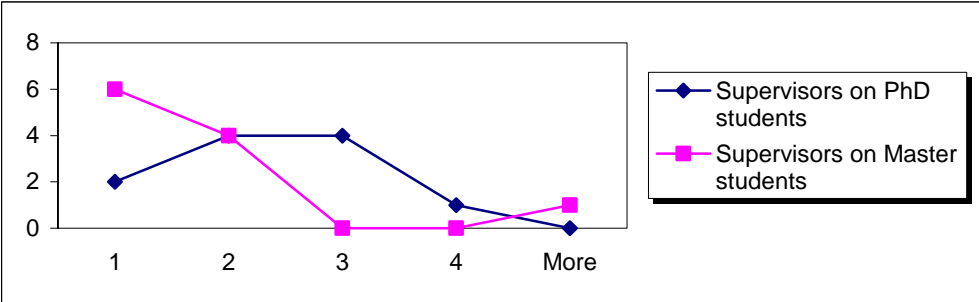
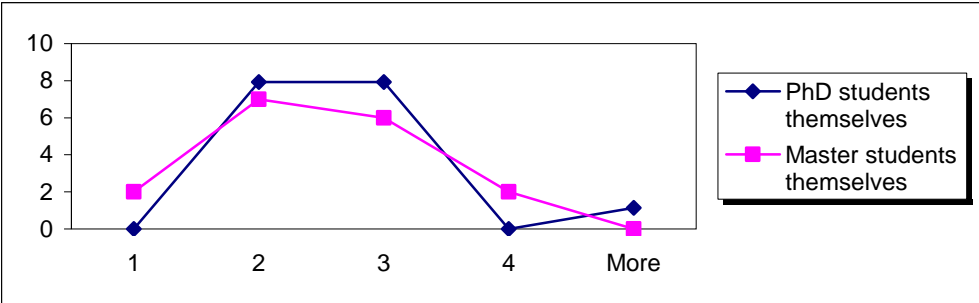


Figure 8. Distribution of responsibility in providing resources that will support the student's research: comparison of attitudes of different respondent groups. See Figure 1 caption for the notations.

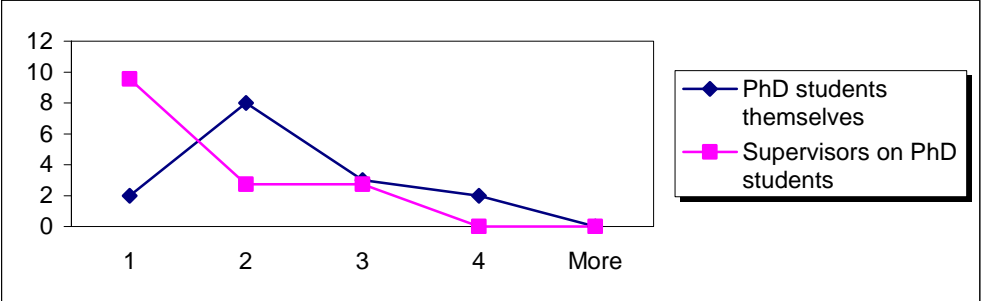
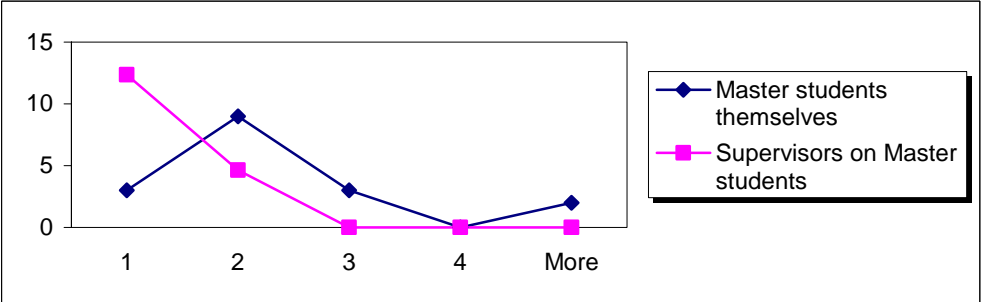
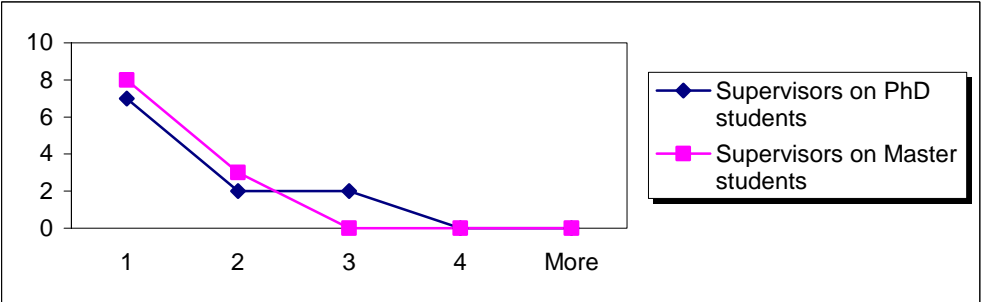
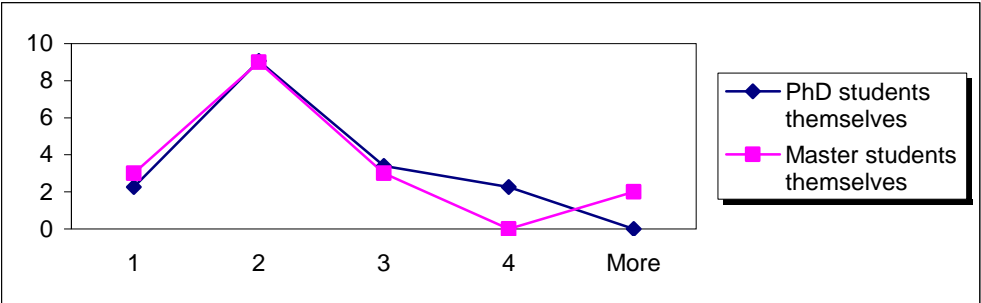


Figure 9. Distribution of responsibility in developing a network of fellow students or staff for the student: comparison of attitudes of different respondent groups. See Figure 1 caption for the notations.

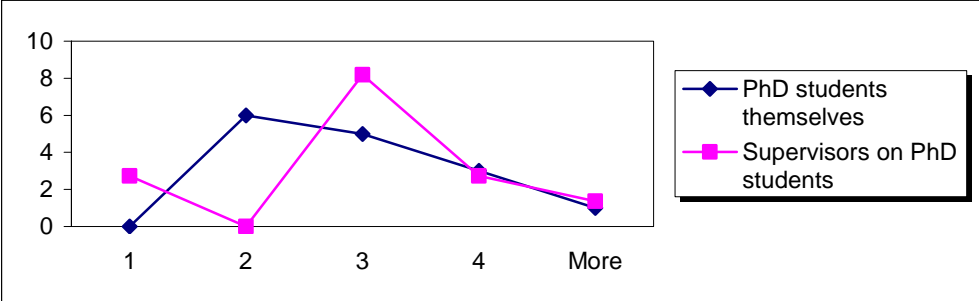
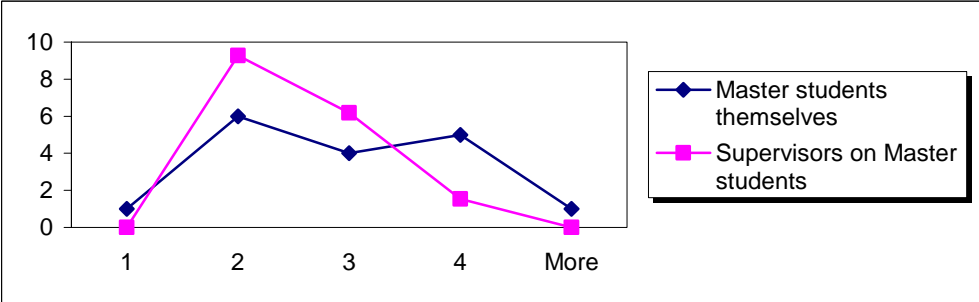
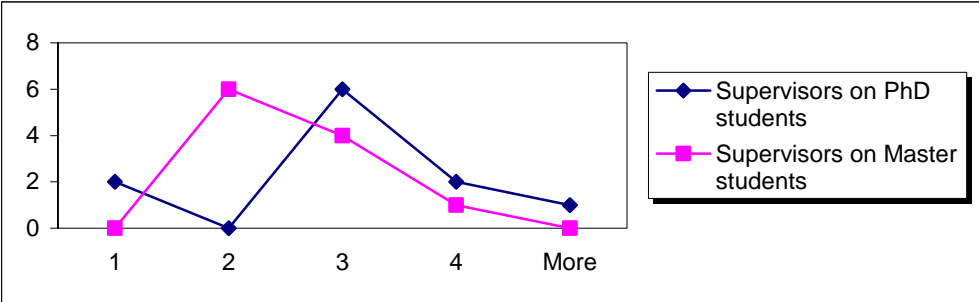
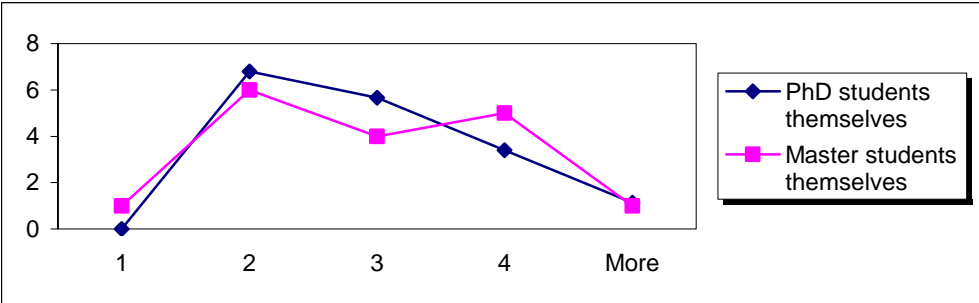


Figure 10. Distribution of responsibility in ensuring that the student’s program is on track and on schedule: comparison of attitudes of different respondent groups. See Figure 1 caption for the notations.

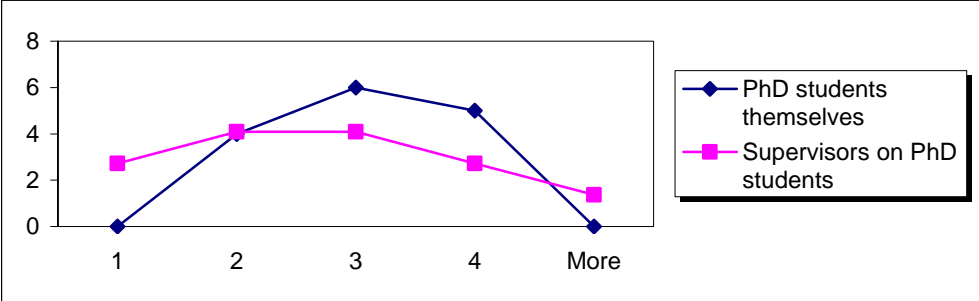
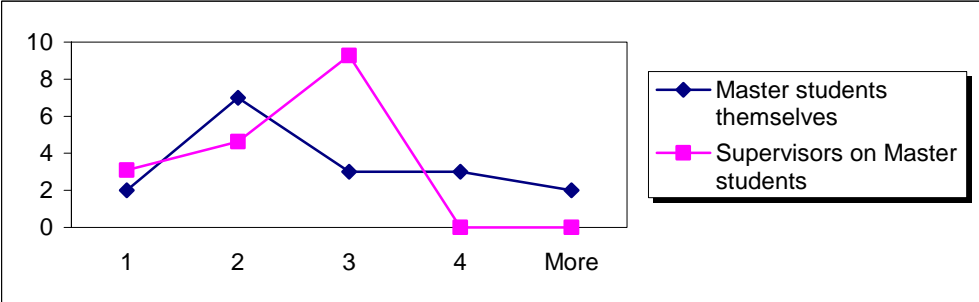
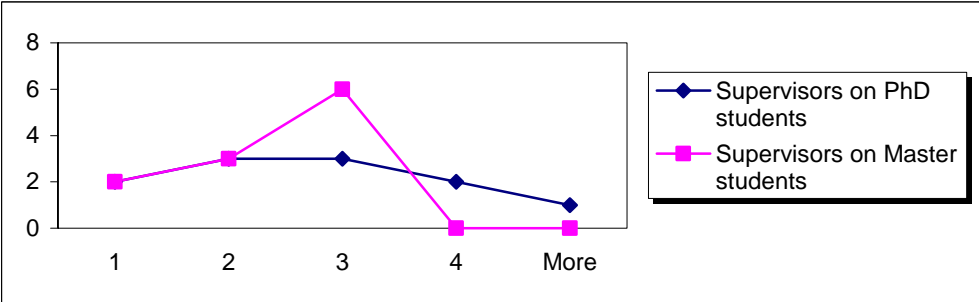
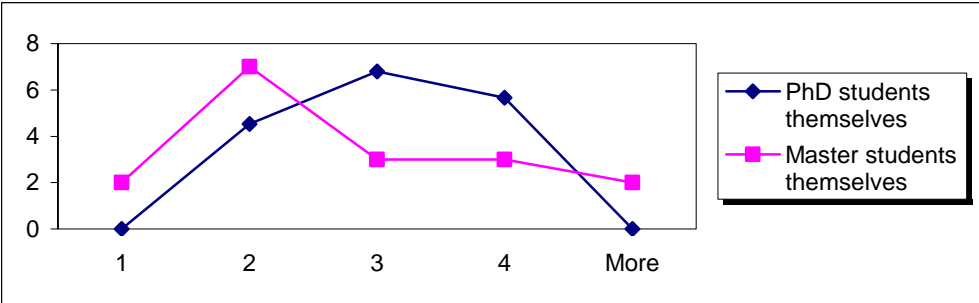


Figure 11. Distribution of responsibility in providing emotional support and encouragement to the student: comparison of attitudes of different respondent groups. See Figure 1 caption for the notations.

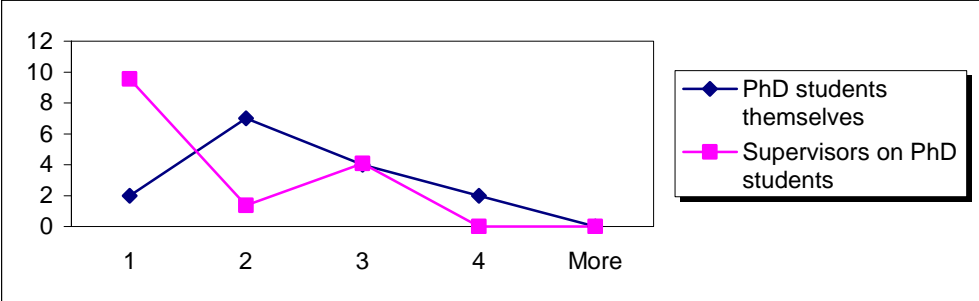
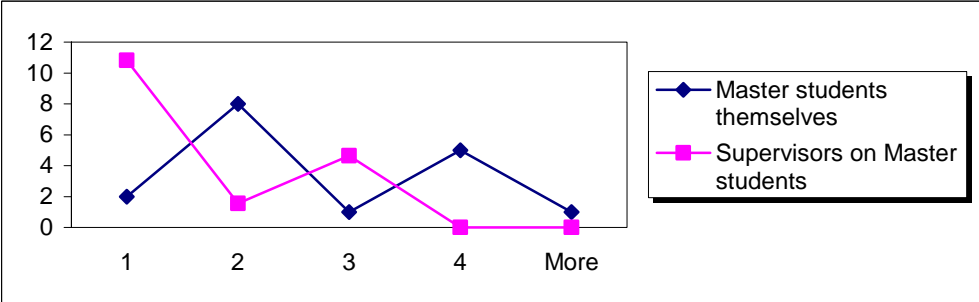
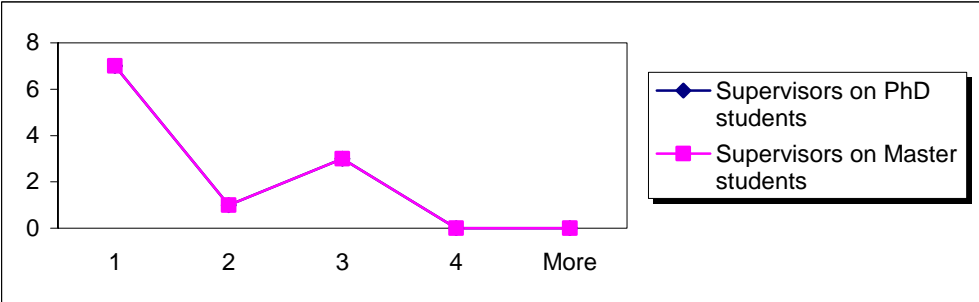
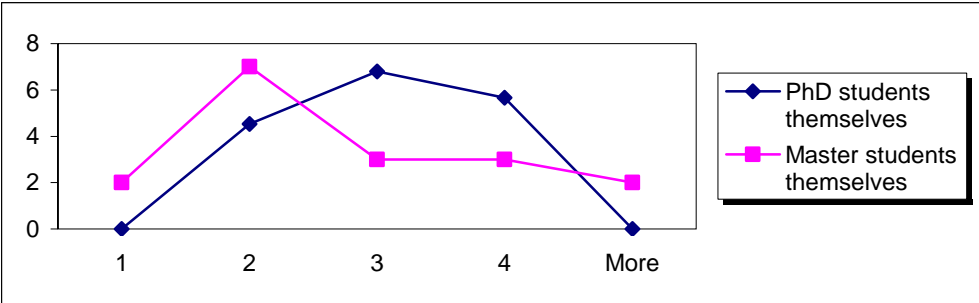


Figure 12. Distribution of responsibility in maintaining an effective working relationship between supervisor and student: comparison of attitudes of different respondent groups. See Figure 1 caption for the notations.

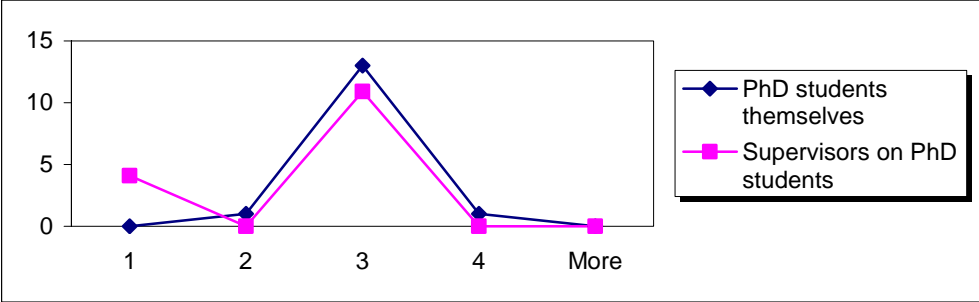
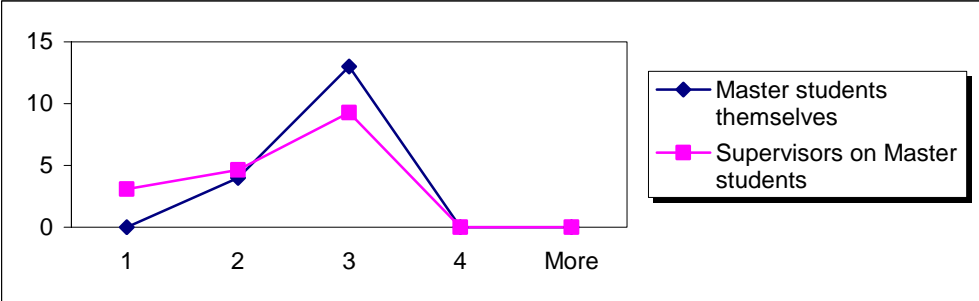
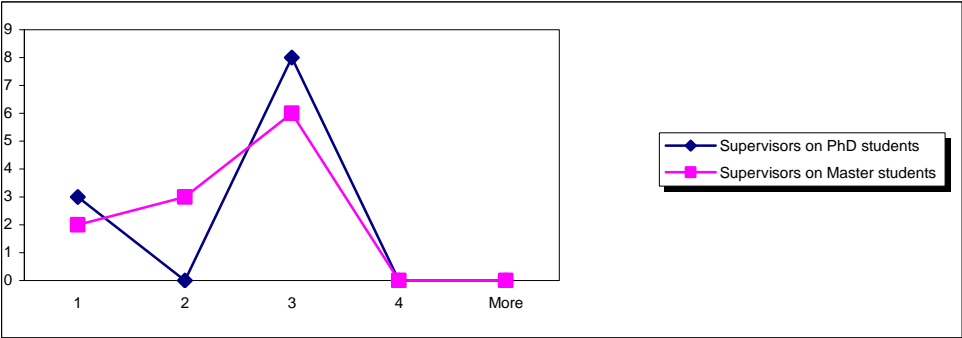
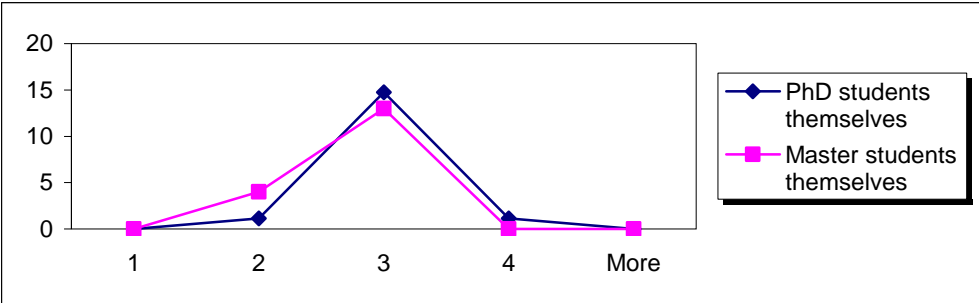


Figure 13. Distribution of responsibility in ensuring that the thesis will be of acceptable standard when examined: comparison of attitudes of different respondent groups. See Figure 1 caption for the notations.

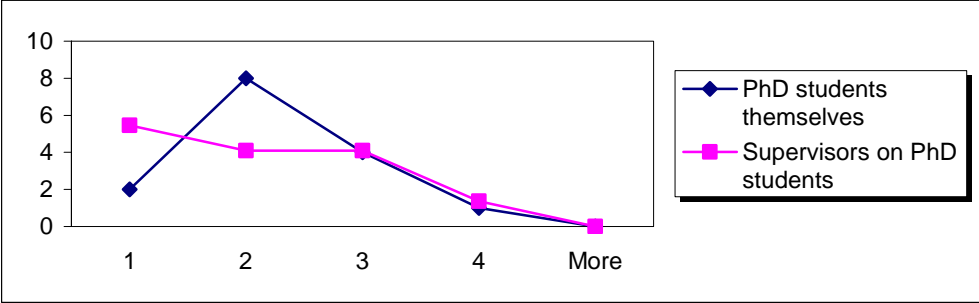
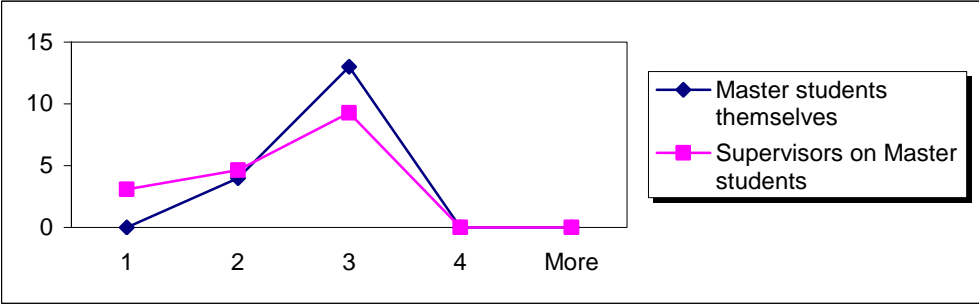
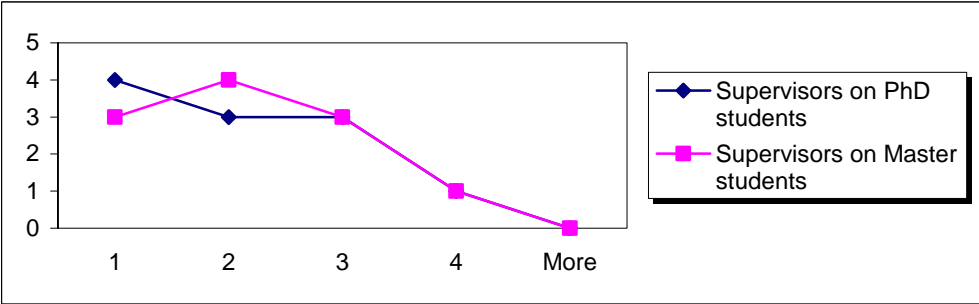
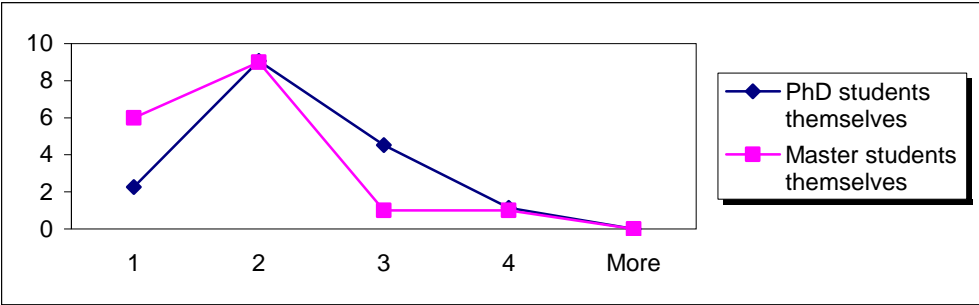


Figure 14. Distribution of responsibility in ensuring that the current research literature has been identified and read by the student: comparison of attitudes of different respondent groups. See Figure 1 caption for the notations.

