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# OPINIONS OF M ED STUDENTS ABOUT EDUCATIONAL RESEARCH

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## Abstract

In many parts of the world, teachers, school administrators, ministry officials, and educators enrol in M Ed programmes as an important step toward career advancement through professional development. These programmes include educational research as a central component of study and aim to equip the students with knowledge and skills to be consumers and practitioners of educational research. However, there is hardly any study of how these people perceive to be the nature and relevance of educational research.

This small study was a survey of 96 M Ed students at Universiti Brunei Darussalam from 1996 to 2000. Their views about educational research at the beginning of a core *Introduction to Educational Research* course was assessed using a 40-item questionnaire that captured opinions about the nature of educational research, including its relevance to personal needs, participation in joint research, and ethics issues. Sixty-five of them also answered the questionnaire at the end of the course. Some significant changes in opinions were found. During the course, the students used the data to practise data analysis with SPSS. This part of the training highlights the stance that educators who collect data from their students should not do so solely for the sake of their research; rather they should endeavour to use the data to advance the learning of their students.

## Introduction

In many parts of the world, teachers, school administrators, ministry officials, and educators enrol in M Ed programmes as an important step toward career advancement through professional development. These postgraduate programmes include educational research as a central component of study. They aim to equip these postgraduate students with knowledge and skills to be both consumers and practitioners of educational research. This trend is in line with the movement to train practitioners, in particular teachers, to be researchers and reflective practitioners (Schön, 1983), as well as informed readers of educational texts (Scott, 2000). However, there is hardly any study of how these students perceive to be the nature and relevance of educational research before they begin their study and to what extent these programmes have changed their perceptions. This small study was conceived as part of the learning experience provided to five cohorts of M Ed students at Universiti Brunei Darussalam from 1996 to 2000, and the results cast some interesting insights about their opinions of educational research.

The opinions to be studied were derived from statements found in the literature. Educational researchers have expressed conflicting views of the nature of educational research, and they have debated about the merits and demerits of various research techniques. The most controversial one is the quantitative-qualitative divide. The relevance of educational research to the practitioners, in particular classroom teachers and policy-makers, has been challenged because of various reasons, such as differences in theoretical perspectives, small and non-random samples, delay in data analysis and result reporting, use of jargons and so on. To combat such negative views about educational

research, many educators and funding agencies have produced summaries and books with titles such as “What works” that attempt to distil research findings for the benefits of practitioners and policy-makers (e.g., Berliner & Casanova, 1993; Marzano, 2003). Postgraduate students will have come across these writings. Forty statements were written to describe these views about educational research. The respondents were to rate each statement on a 5-point Likert scale (Strongly Disagree to Strongly Agree). It took about 30 minutes to complete the questionnaire.

### **Background And Aims Of Study**

The M Ed programme at Universiti Brunei Darussalam was first introduced in 1996. It had two core courses called *Introduction to Educational Research* and *Educational Research Methodologies*. Each course was of 42-hour duration, with the first course completed before the second one. The first course dealt with the basic process of conducting educational research, preparing a proposal, analysing data using SPSS, and becoming familiar with the educational research environment in Brunei Darussalam. The second course covered quantitative and qualitative methodologies in greater details. The organisation and contents of both courses were changed slightly in the first five years from 1996 to 2000, but since 2001, the second course was replaced by a choice of three courses on action research, quantitative methodologies, and qualitative methodologies respectively. Both courses were conducted in English. Most of the students were sponsored by the Brunei Ministry of Education. The students in each cohort answered the questionnaire at the beginning of the first course. Three cohorts also took the questionnaire at the end of this course.

The main aim of collecting opinions about educational research from the students was to help them understand the design of questionnaire, develop the skills to analyse data using SPSS, and interpret statistical outputs. Using their own opinions in this course seemed to raise their motivation for the assigned exercises. This part of the training highlights the important stance that educators who collect data from their students should not do so solely for the sake of their research; rather they should endeavour to use the data to advance the learning of their students.

### **Characteristics Of The M Ed Students In The Study**

There were altogether 96 M Ed students in the five cohorts. They were enrolled in four different strands as shown in Table 1 below. The three strands of Educational Management, Language Education, and Special Need Education were balanced in terms of gender, but surprisingly females outnumbered males in the Science and Mathematics Education strand.

Table 1. Strands by Gender of M Ed Students

Strands	Male	Female	Total
Educational Management	26	27	53
Science & Mathematics Education	9	21	30
Language Education	3	4	7
Special Needs Education	3	3	6
<b>Total</b>	<b>41</b>	<b>55</b>	<b>96</b>

Half of them were in the Educational Management strand, which catered to mainly school administrators and ministry officials than teachers. For the Science and Mathematics Education

strand, there were significantly more teachers than ministry officials. There were very few students in the (English) Language Education and Special Needs strand. See Table 2.

Table 2. Strands by Positions of M Ed Students

Strands	Teachers	Administrators	MOE	Total
Educational Management	15	28	6	49
Science & Mathematics Education	23	1	6	30
Language Education	3		4	7
Special Needs Education	3		3	6
<b>Total</b>	<b>38</b>	<b>27</b>	<b>19</b>	<b>92</b>

These students were from 25 to 48 years old, with mean age 38 years. Their teaching experience ranged from 2 to 23 years, with 90 percent having fewer than 21 years of teaching experience (mean of 13.4 years). Thus, many of them were at the mid-career stage, the reason being that the Brunei Ministry of Education would normally sponsor only teachers and officers who were younger than 45 years old to attend the Masters programmes. In terms of experience with educational research, 41 percent reported having practically no experience, while 58 percent had slight experience; see Table 3. Hence, the opinions reported here were those with little exposure to educational research, and these could be very different from those held by expert researchers.

Table 3. Experience of Educational Research

Experience in Educational Research	Male	Female	Total
Practically none	14	25	39
Slight	25	30	55
Moderate	1		1
<b>Total</b>	<b>40</b>	<b>55</b>	<b>95</b>

The 40 statements are classified under seven clusters, each covering similar issues. In the tables that follow, for each item, the frequencies for Strongly Disagree and Degree are grouped together, likewise for Agree and Strongly Agree, in order to better distinguish between those who were inclined to disagree, to agree, or to hold neutral opinions.

### **Cluster 1: Usefulness And Reality**

Other than as a core component in M Ed programmes, educational research should be perceived to have some utility value to the students. The nine items in this cluster examine the usefulness of educational research and the extent to which educational research reflects reality in schools and classrooms. See Table 4. As expected, most of them (97 percent) believed that research skills are very important for their career development. Nearly 70 percent were prepared to pay on their own to attend research seminars and conference. This shows that the students accepted the importance of educational research.

Table 4. Percentages and Means of Responses to the Usefulness Items

No.	Item	SD/D	U	A/SA	Mean
5	Developing skills in educational research is very important for my career development.	3.1		96.9	4.51
29	I am keen to attend educational research seminars or conferences, even if I have to pay the registration fee myself.	1.0	27.1	71.9	3.81
26	Policy makers should base their planning on the findings of educational research.	3.1	12.5	84.4	4.14
35	Teaching strategies should be guided by research findings.	4.2	13.5	82.3	3.90
34	Teachers have strong beliefs about education that are grounded in their personal experiences rather than in findings of educational research.	13.5	10.4	76.1	3.70
23	Research on educational practice would not be very relevant or useful if it is undertaken solely by non-practitioners.	26.4	18.9	54.7	3.36
17	Most educational research studies take so many years to complete that they are useless to the policy makers who want quick answers.	44.2	23.2	32.7	2.92
14	Many educational research studies are conducted in artificial settings (e.g., teaching laboratories) that are different from real situations in schools and classrooms.	55.8	20.0	24.3	2.65
6	Educational research conducted by academics is too theoretical and cannot be applied to real situations.	65.7	17.7	16.7	2.47

More than 80 percent agreed that policy-decisions and teaching should be guided by research, a message widely disseminated in the literature. However, whether research findings are actually used or not is quite controversial. For example, to support curriculum reforms in mathematics, the National Council of Teachers of Mathematics produced a research companion (Kilpatrick, Martin & Schifter, 2003). On the other hand, Slavin and Fashola (1998) claimed that “educators often disregard evidence and make decisions based on what’s easy, what’s politically palatable, or what’s marketed in an appealing way” (p. vii). Iano (1987) felt that in education, “there are no well-established, lawlike regularities of practice or dependable generalizations of wide applicability” (p. 257). Indeed, one can find many examples of inconclusive findings of educational research on controversial issues, such as use of calculators in primary schools and whole language teaching. These views and debates seem to challenge the actual usefulness of educational research. With reference to research in mathematics education, Hiebert (1999) wrote:

The current debates about the future of mathematics education often lead to confusion about the role that research should play in settling disputes. On the one hand,

researchers are called upon to resolve issues that really are about values and priorities, and on the other hand, research is ignored when empirical evidence is essential. (p. 3)

About three-quarters of the students agreed that teachers developed strong beliefs about education based on their experiences rather than research findings. Thus, although research findings should be used, they may not actually change teachers' beliefs about education.

The students were somewhat divided in their opinions about the relevance of educational research conducted by non-practitioners, although about two thirds also disagreed that research conducted by academics were too theoretical or could not be applied in real situations. Their opinions were also divided over the negative impacts of the long time it takes to complete research studies. Indeed, it is not uncommon to read in educational journals about studies completed several years before they were published. Slightly more than half disagreed that many educational research studies were conducted in artificial settings, but some of them believed this to be so. Although there are no "teaching laboratories" in Brunei Darussalam, the perception about educational research being conducted in artificial settings could be related to what these students read about experiments in psychological clinics. In a small country like Brunei Darussalam which has a limited tradition of educational research, the relevance of research findings for policy and practice is even more uncertain.

### **Cluster 2: Coherence And Meaningfulness**

Results from educational research must be coherent and meaningful in order to serve the utility values mentioned above. Some educators feel that the education community "has never developed a high degree of internal coherence" (Lagemann, 2000, p. ix), but this perception could be challenged by several major attempts to synthesise research findings reported in well-known handbooks (e.g., Richardson, 2001; Sikula, Buttery & Guyton, 1996).

The first four items in this cluster (Table 5) deal with opinions about whether research has produced coherent or conclusive knowledge about education. The differences in their opinions were quite striking. Nearly 40 percent indicated that they were unsure about the coherence of research finding or whether research studies were small scaled and disorganised. There were slightly more students who agreed that findings are not conclusive than those who disagreed. They were also not quite sure whether researchers prefer to publish in scholarly journals or make their findings meaningful to the general public. To counter this rather negative trend, examples of major knowledge from research (e.g., Wittrock, 1986) and longitudinal studies were discussed in the course.

The last two items relate to the students' understanding of research findings. About 40 percent agreed that research reports are full of jargon and difficult to understand, and an equal proportion disagreed that this was so. It seems that the various efforts to make research findings more accessible to practitioners by using clear language free of jargon have not been quite successful. Many students found it particularly difficult to understand the jargon used in qualitative research papers, partly because they were not very strong in English. Slightly less than half of them were cautious when reading articles of educational research. It became clear during the course that many students tended to accept the conclusions given in research papers, because they could not understand the statistics used.

Table 5. Percentages and Means of Responses to the Meaningfulness Items

No.	Item	SD/D	U	A/SA	Mean
36	Most findings in educational research are not conclusive.	29.2	36.5	34.3	3.06
33	Many significant issues in education are not “researchable.”	39.0	40.0	21.0	2.81
7	Educational research has become so diversified that it has not produced any coherent body of accumulated knowledge about education.	42.2	42.1	15.8	2.74
18	Educational research tends to be small-scale, short-term, not inter-connected, and rarely longitudinal.	45.2	36.8	17.9	2.63
22	Most educational researchers shy away from making their findings meaningful to the general public; they prefer to publish in scholarly journals.	25.3	40.0	34.8	3.11
13	I will adopt a skeptical outlook when reading articles of educational research.	25.5	28.7	45.7	3.26
19	I find most reports of educational research full of jargon and difficult to understand.	42.1	17.9	40.0	3.02

### Cluster 3: Science And Rigour

Educators have continued to debate whether educational research can be a science or not. Terms like “scientific research in education” (Shavelson & Towne, 2002), “science of education” (Lagemann, 2000), and “education science” are used to stress the role of scientific methods. From the early days of educational research to 1970s, most studies used scientifically related designs such as experimental and correlational studies to investigate educational issues. However, in the 1980s, educators in the qualitative movement have argued strongly against using scientism and the positivist paradigm in educational research, citing the lack of coherent knowledge gained from applying the scientific methods. For example, Iano (1987) wrote that, “Despite the apparent failure of some eighty years of effort in research, many educators still hope to place educational practice on a scientific basis” (p. 265). In recent years, the demands for evidence and accountability to support various educational reforms have once again moved toward experimental designs. Crandall, Jacobson and Sloane (1997) stated that “the same scientific method that solved many complex problems in medicine and industry is up to the challenge of determining which teaching methods are the most effective” (p. 3). Slavin and Fashola (1998) claimed that “many educators and academics do not believe in quantitative research at all” (p. 6) and complained that many program developers used evidence of doubtful quality.

Table 6 gives the students’ responses to statements about this debate. Three-quarters of them believed that certain methodologies are more “scientific” than others and hence should be used. They were divided in their opinions whether educational research is or is not as rigorous as scientific research. In particular, action research was perceived by two-thirds of the students to be less rigorous compared to quantitative research.



On the quality of research findings, it is rather disturbing to note that about one-third of the students believed that research findings could be misused to prove virtually anything. This may be related to the perception that statistics can be used to tell lies about anything. Slightly more than 40 percent were unsure whether the quality of research reports was dubious or not. Although 57 percent were inclined to disagree that findings in educational research were plain common sense, the remaining 43 percent would need some convincing. As a challenge, the students were asked to examine whether given findings are “obvious” or counter-intuitive, modelled after the work of Wong (1995). As Wong (1995) had found previously, some findings on teaching were wrongly classified as common sense by some of the students in this study.

Table 6. Percentages and Means of Responses to the Science and Rigour Items

No.	Item	SD/D	U	A/SA	Mean
3	Certain research methodologies are preferred to others because they are more scientific.	4.3	22.1	73.7	3.75
2	Educational research is not as rigorous as scientific research.	37.5	13.5	48.9	3.15
1	Action research conducted by teachers is not as rigorous as quantitative research conducted by university-based lecturers.	14.5	22.9	62.5	3.64
15	Most research findings in education are plain common sense.	56.8	16.8	26.3	2.67
4	Most of the educational research reported in the literature is of dubious quality.	38.6	41.7	19.8	2.81
10	Findings of educational research can be misused to “prove” virtually anything.	31.6	33.7	34.8	3.04

#### Cluster 4: Roles Of Theories

Advances in science are often based on changing existing theories used to explain observed phenomena. The drastic changes in theories, also called paradigm shifts, can lead to the solution of previously intractable problems. In education, the term *theory* is used to mean many different things (Thomas, 1997), and it is often used interchangeably with *models* or *theoretical framework*. Nevertheless, educational theories are important to help educators make sense of why certain teaching techniques work or do not work under various conditions, understand how children think and learn, propose curriculum reforms, and so on. According to Sagor (2000), “educational shortcomings have almost always been the result of educators faithfully following theories that later turned out to be incorrect or inadequate” (p. 61) rather than “a lack of caring, commitment, or concern” (ibid.). Education programmes invariably include standard theories associated with prominent psychologists, such as Piaget, Bruner, and Skinner and their ideas about pedagogies (Joyce, Calhoun & Hopkins, 1997; also see the database in [www.gwu.edu/~tip/index.html](http://www.gwu.edu/~tip/index.html)). However, theories in education may “inhibit creativity among researchers, policymakers, and teachers” (Thomas, 1997, p. 75) if they are treated as “sacred text, something to be cherished and protected” (p. 96) rather than refuted as with scientific theories. Teachers are known to find theories difficult to put into practice, and they tend to ignore them once they have graduated from their training. Thus, it is quite surprising to find that more than 90 percent of these students had

favourable opinions about theories in educational research. They may have absorbed the message that theories are important, yet two-thirds of them tended to have more interest in decision-oriented research than in theory-oriented ones.

Table 7. Percentages and Means of Responses to the Theories Items

No.	Item	SD/D	U	A/SA	Mean
11	I am more interested in decision-oriented research than in theory-oriented research.	5.3	32.6	62.1	3.62
8	Educational research should be guided by theories.	3.2	2.1	94.7	4.04
38	We should include some theory into our dissertation/field project/school-based study.	2.1	5.2	92.7	4.16

### Cluster 5: Techniques Of Educational Research

Educators use many different techniques to study educational issues. These techniques are often in conflict because they are based on different epistemologies and ideologies. The major division is between quantitative and qualitative methodologies. With respect to this division, educators have adopted one of three clear positions: antagonistic stance, complementary compromise, or separatist paths. However, Shulman (1988) advised that neophyte educational researchers should be familiar with both types of methodologies.

From the results given in Table 8, about half of the students believed that qualitative research is more holistic than quantitative one, and most of them also agreed that a variety of research methodologies should be used, including integrating ideas from different disciplines. They held different views about the use of statistics, and half of them may skip the statistics and focussed on the discussion sections. A plausible reason is that most of them were not knowledgeable about educational statistics. Finally, most of them believed that large samples should be used. Nine out of ten realised the importance of having contingency plans because things could go wrong in their research.

Table 8. Percentages and Means of Responses to the Techniques Items

No.	Item	SD/D	U	A/SA	Mean
28	Projects that use sophisticated statistics are more valuable than those using no, or simple, statistics.	33.4	20.8	45.9	3.18
30	Qualitative research is better than quantitative research because it is more holistic.	10.4	37.5	52.1	3.51
31	We must use a variety of research methodologies to tackle the same educational problem.	5.2	9.4	85.4	4.02
39	Results from large samples are more reliable than from small samples.	8.3	9.4	82.3	4.08

20	Educational research involves integrating ideas from many different disciplines, such as science, history, psychology, social sciences.	4.3	3.2	92.7	4.11
12	When reading research reports, I often skip the statistics and concentrate on the discussions.	52.7	2.1	45.3	2.88
25	A lot of things can go wrong in educational research, so it is important to have contingency plans.	6.4	3.2	90.5	3.98

### Cluster 6: Collaboration

The results in Table 9 show that most of the students were happy to join a collaborative research team because they believed that working under an expert researcher is the best way to learn about educational research. On the other hand, about two-thirds thought that there were little educational research done in Brunei Darussalam, which is true in comparison with the situations in more advanced countries. The Collaborative Agenda for Research in Education was an initiative established in 1997 to promote a collaborative research agenda among university educators, school practitioners, and ministry officials. The progress reports of these collaborative projects were published in the newsletter *INFOCARE* from 1998 to 2001 and two annual reports (Wong, 1998, 2000).

### Cluster 7: Ethical Issues

In recent years, ethical issues in educational research, such as informed consent, confidentiality, and protecting the subjects from harmful effects, are taught in graduate courses. The results in Table 10 show that most of the students tended to agree with the guidelines about these issues.

Table 9. Percentages and Means of Responses to the Collaboration Items

No.	Item	SD/D	U	A/SA	Mean
16	I prefer to join a team when conducting research than to go it alone.	8.5	15.8	75.8	3.93
21	I would be happy to take part in the Institute's Collaborative Agenda for Research in Education if I can use part or all of the data for my dissertation/field project/school-based study.	3.2	16.8	80.0	3.95
37	The best way to learn about educational research is to work as an apprentice under the guidance of an experienced researcher.	3.1	5.2	91.7	4.24
27	There is little educational research done in Brunei Darussalam.	9.5	24.2	66.3	3.71

Table 10. Percentages and Means of Responses to the Ethics Items

No.	Item	SD/D	U	A/SA	Mean
32	Research data should be kept in confidence to protect the participants.	20.8	6.3	73.0	3.75
9	Educational researchers must not put the participants (such as students, teachers) at risk.	13.7	13.7	72.7	3.80

24	Since sensitive issues may be involved in educational research, careful control needs to be exercised regarding what is being researched and how the findings are to be disseminated.	5.2	13.5	81.3	3.91
40	There should be a code of ethics for educational researchers to prevent human subjects or research data from being wrongly manipulated.		11.5	88.6	4.20

### Changes In Opinions

For three of the five cohorts, it was possible to administer the same questionnaire to the students at the end of the *Introduction* course. This gave a sub-sample of 65 students. The changes in the pre-post mean scores of the forty items were tested using paired samples *t*-tests. Twelve items had *t*-values that were statistically significant at the 5% level. These items are reported in Table 11. The effect sizes of the changes range from 0.27 to 1.00.

All the changes reflect a tendency towards the positive end of the given items. In particular, the students held stronger agreements toward all the four ethical issues mentioned. They believed that there were actually more educational research studies conducted in Brunei than they originally thought, and this could be due to the fact that local studies were discussed during the course. After the course, they tended to *disagree* more than before that the jargon used in educational reports were difficult to understand, research conducted by non-practitioners were not relevant, and studies were conducted in artificial settings. They also changed their opinions about the use of sophisticated statistics, believing that it is not necessarily more valuable than simple statistics. However, they were slightly less keen to attend seminars and conferences if they had to pay for them on their own.

What is worth noting is that the course did not seem to affect their opinions about the more controversial statements about science and educational research, coherence of educational research findings, and the roles of theories. Admittedly, these issues have no universally accepted answers and require wider exposure to experience and readings about educational research, which these students were just about to embark on. They are also less “concrete” than statements about ethics, paying for attendance of seminars, making contingency plans, and the number of local studies.

Table 11. Items with Significant Differences between Pre- and Post-test (n = 65)

No	Item	Pre-Mean	Post-Mean	Post-Pre
<b>Usefulness &amp; Meaningfulness of Educational Research</b>				
19	I find most reports of educational research full of jargon and difficult to understand.	3.15	2.68	-0.48
23	Research on educational practice would not be very relevant or useful if it is undertaken solely by non-practitioners.	3.45	3.05	-0.40
14	Many educational research studies are conducted in artificial settings (e.g., teaching laboratories) that are different from real situations in schools and classrooms.	2.74	2.43	-0.31
29	I am keen to attend educational research seminars or conferences, even if I have to pay the registration fee myself.	3.77	3.57	-0.20
<b>Techniques of Educational Research</b>				
28	Projects that use sophisticated statistics are more valuable than those using no, or simple, statistics.	3.18	2.71	-0.48
25	A lot of things can go wrong in educational research, so it is important to have contingency plans.	4.06	4.31	0.25
39	Results from large samples are more reliable than from small samples.	4.03	4.46	0.43
<b>Local Research</b>				
27	There is little educational research done in Brunei Darussalam.	3.69	4.03	0.34
<b>Ethical Issues</b>				
24	Since sensitive issues may be involved in educational research, careful control needs to be exercised regarding what is being researched and how the findings are to be disseminated.	3.92	4.18	0.26
40	There should be a code of ethics for educational researchers to prevent human subjects or research data from being wrongly manipulated.	4.28	4.60	0.32
32	Research data should be kept in confidence to protect the participants.	3.63	4.20	0.57
9	Educational researchers must not put the participants (such as students, teachers) at risk.	3.69	4.57	0.88

The students were also asked to give free responses about the course. Six quotations are cited below. The first three responses stress the importance of educational research for principals and teachers, while the last two show that the course had enhanced their confidence about research. The last quote gave a glimpse into a change in attitude about being more reflective and critical of what one reads. This is certainly one of the main objectives of a postgraduate course, especially for consumers or practitioners of research.

1. Now, I know the importance of educational research in my career. From educational research I became aware what are the current teaching and learning these are. I also know that pupils feeling, thinking should be taken into account while doing my teaching. (Norbaini)
2. After attending the course, in two months time, I am aware of many educational research areas which need to look at. From classroom interaction to social life of the students outside the school, a lot of areas are needed to look into for research. I think I need more knowledge on this area. (Metassin)
3. It is not so difficult after all, but demanding. (Kong)

4. I have become more positive and confident about educational research. I can see very clearly about the distinction between quantitative and qualitative researches. I strongly believe that all principals should be familiar or knowledgeable with or about educational research. (Masdi)
5. Confirm my teaching practices. Used to look up to researchers, but now believe can be at par. (Zarina)
6. From what I have already know about educational research, the interesting part is the ‘Action research’. It teaches me to be ‘reflective’ in whatever I am doing during the course, to be critical and synthesize in what I’ve read. (Gani)

### An Exercise About Cronbach’s Alpha

Fifty years ago, Cronbach (1951) predicted that the alpha coefficient will “become increasingly prominent in the test literature” (p. 299). This was borne out by a recent review by Hogan, Benjamin and Brezinski (2000) who reported that about three-quarters of 696 tests investigated by the authors used the alpha coefficient. The students were taught various types of reliability coefficients, and one exercise required them to carry out the following procedure using the opinion data: (a) select several items that are conceptually related to form a scale; (b) explain what this scale is intended to measure; (c) calculate its Cronbach’s alpha to check whether or not the scale is supported by empirical data. Many scales proposed by the students did not pass the criterion of 0.7 for psychological tests (Nunnally & Bernstein, 1994). Part of the reason was the relatively small data they had to work with. One successful attempt was given by a student who grouped items 6, 14, 17, 19, and 23 (4 items from Cluster 1 and one from Cluster 2) to form a scale named “Drawback” of educational research. Its alpha was 0.72. His description is as follows:

The scale is labelled as “drawback.” All the five items are statements describing the drawbacks in educational research, such as being too theoretical, many were conducted in artificial settings, long duration and too many jargons used in reports. All these drawbacks make educational research irrelevant and less useful to practitioners like the teachers and school administrators who want to use the findings in real classrooms and schools situations.

Given this acceptable alpha, the students’ overall perceptions about “drawback of educational research” were obtained by computing the means of their scores on these five items. Lower means will indicate more *positive* opinions. There were no statistically significant gender differences. However, those with some experience with educational research tended to *disagree* with these drawbacks. See Table 12.

Table 12. Differences in Opinions about Drawbacks of Educational Research by Experience (n = 94)

Experience	N	Mean	SD	t	p
None	39	3.09	0.66	2.54	.013
Slight	55	2.74	0.67		

### Conclusion

The results of this study support the common perception that educators have adopted different, at times conflicting, methods to study educational issues, ranging from classroom teaching to systemic reforms. The complexities of the educational field have led Berliner (2002) to claim that educational research is the hardest *science* of all. The controversy over whether educational research can be a

science or not is still hotly debated and some of the students in this study also held differing views of this issue. Lim (1992), in giving her opening and keynote address to the annual conference of the Educational Research Association Singapore a decade ago raised the following caution:

As a result of the frequent disagreements, or conflicts, among educational researchers regarding models, methods and messages used by them, many practitioners find the outcomes of educational research quite confusing and of questionable relevance. (p. 3)

The present study had two obvious limitations. First, the results were obtained from five cohorts of M Ed students from a small university in Southeast Asia. Most of them were Malays, not very strong in English, and had practically no research experience. Their views could not be readily generalised to postgraduate students in other countries, especially the Western ones, which have very different cultural practices and values and a much longer tradition of educational research. Second, the items in the questionnaire did not deal with issues such as the political functions of educational research, its epistemological roots, impacts of technologies, and so forth. Collecting data from various countries will add a new dimension to the comparative study of education.

To conclude, those who teach courses in educational research could begin their courses with a similar study, discuss the students' responses, set exercises based the data, and assess changes in students' opinions at the end of the courses. These activities using real data will raise the students' motivation toward understanding and practising educational research. Collectively, the findings from similar studies will enhance our understanding of how beliefs about educational research can be changed for the better, thus supporting the call to make educational research more relevant and meaningful to practices.

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