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Midwifery Students' Evaluation Of Team-Based Academic Assignments Involving Peer-Marking

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ABSTRACT

Background: Midwives should be skilled team workers in maternity units and in group practices. Poor teamwork skills are a significant cause of adverse maternity care outcomes. Despite Australian and International regulatory requirements that all midwifery graduates are competent in teamwork, the systematic teaching and assessment of teamwork skills is lacking in higher education.

Question: How do midwifery students evaluate participation in team-based academic assignments, which include giving and receiving peer feedback?

Participants: First and third year Bachelor of Midwifery students who volunteered (24 of 56 students)

Methods: Participatory Action Research with data collection via anonymous online surveys.

Key findings: There was general agreement that team based assignments; i) should have peer-marking, ii) help clarify what is meant by teamwork, iii) develop communication skills, iv) promote student-to-student learning. Third year students strongly agreed that teams: i) are valuable preparation for teamwork in practice, ii) help meet Australian midwifery competency 8, and iii) were enjoyable. The majority of third year students agreed with statements that their teams were effectively coordinated and team members shared responsibility for work equally; first year students strongly disagreed with these statements. Students' qualitative comments substantiated and expanded on these findings. The majority of students valued teacher feedback on well-developed drafts of the team's assignment prior to marking.

Conclusion: Based on these findings we changed practice and created more clearly structured team-based assignments with specific marking criteria. We are developing supporting lessons to teach specific teamwork skills: together these resources are called "TeamUP". TeamUP should be implemented in all pre-registration Midwifery courses to foster students' teamwork skills and readiness for practice.

Key Words: Teamwork; Midwifery; Students, undergraduate; Peer feedback; Assessments; Education; Group work

Introduction

Lack of effective teamwork skills is a major cause of adverse outcomes in maternity care. Reviews into 'serious untoward incidents' cite teamwork skills as a modifiable 'cause' (1, 2). The United Kingdom King's Fund inquiry into the safety of public maternity services found recurring problems with teamwork and stated that "poor teamwork can jeopardise safety" (2, p.xviii). In Australia, the most recent maternity services review recognised the importance of effective teamwork skills in the provision of a high quality maternity service (3). As a result, national guidelines for the promotion of multidisciplinary collaborative teams have been developed (4). In addition, basic competency standards published by regulatory authorities (Australian Nursing and Midwifery Council, International Confederation of Midwives) require midwifery graduates to have teamwork skills (5, 6). Despite the importance of teamwork skills, there is no evidence that these skills are systematically taught or assessed in either midwifery education or practice.

Background

In the literature, the terms 'team' and 'group' are often equated (7). An important distinction is that while groups allow for individualistic action, teams require interdependence, coordination and collaboration (8). In general terms the literature shows that students in higher education can develop teamwork skills through their participation in team-based assignments for assessment (9). Engaging students in collaborative teamwork leads to enhanced student learning, satisfaction and retention (9). Skills that are well suited to development via teamwork assignments include problem solving, project planning, coordination, interpersonal and communication skills (11, 12). Anonymous peer feedback and marking is recommended as a way to shape members' teamwork skills (13). The quality of peer-assessment is enhanced when feedback is specific, justified, focused on actions under the student's control (not personal characteristics), sufficient in frequency and is received by students when it still matters (14, 15). Academics are encouraged to quantify peer feedback so it contributes to the individual student's final mark. Thus the individual mark is combined with the mark for the team assignment; this means that students who participate to a high quality receive higher marks than those who do not (13, 16, 17). The validity of peer assessment of individual performance has been questioned both in terms of whether students are too easy or too hard on each other (7, 16). Various tools have attempted to address these issues of validity and fairness; student anonymity being of prime importance in encouraging students to give honest appraisals of each other (for example, 18).

Much of the research about teamwork education in health care is focused on interdisciplinary clinical activities, most commonly cardiac arrest teams (for example, 19). The other area dominating the teamwork research literature is simulation-based clinical learning (for example, 20). These types of teams are highly structured and short lived; neither are they the type of team we think of when we think of midwives working in maternity units and group practices. Two studies have evaluated team-based assignments in nursing students where the teams had many weeks of interaction. Yang and colleagues (21) found that most students valued the process of learning in teams and enjoyed work with their peers although they were "uneasy with peer evaluation" (p.76). A second study found that nursing students considered peer assessment worthwhile because it resulted in fairer scoring, improved teamwork quality and increased the likelihood of students contributing to their group (22). No research involving midwifery students has reported assessing students' team-based academic assignments involving peer-marking. Indeed, there is no research evaluating how effective midwifery team-based assessment practices are.

Development of the team-based academic assignments, that were the basis for this study, was guided by the constructivist educational philosophy that guides the whole Bachelor of Midwifery program (23). Within this philosophy, academics establish appropriate learning events where the students are responsible for their own learning. New knowledge is integrated with existing knowledge and applied to the learner's own context (24). Situated learning is a form of constructivist learning that suits the practice discipline of midwifery (25). A situated learning perspective is based on the belief that skill development and knowledge is contextually situated and is fundamentally influenced by the activity, context, and the culture in which it is used (26). Learning and skill development in this Bachelor of Midwifery program involves structured collaborative interaction with other students, practitioners, and childbearing women. The program's continued development

is further advanced through a Participatory Action Research project of which the present research is a part.

Question and Key Terms

Research Question: How do midwifery students evaluate participating in team-based academic assignments, which include giving and receiving peer feedback?

In this project we define a '***team***' as a coordinated group of interdependent individuals, with distinct roles and a collective identity, who work collaboratively towards shared goals. ***Teamwork*** refers to the coordinated effort of a team and to its efficient work as a collective (8). We define ***teamwork skills*** as a complex group of learned behaviours that provide the individual with the capability to effectively foster the success of a team as a whole. These definitions were developed to serve a normative and teaching function which guide students towards expected behaviour.

Methods

This evaluation study arose from the second cycle of an ongoing Participatory Action Research (PAR) project called "TeamUP". This section reports on the participants, research design, the teamwork 'intervention' and the methods of data collection and analysis. Ethical approval was granted by the university's Human Research Ethics Committee prior to administration of the survey. Students' completion of the survey was considered to be a low risk application because participation was voluntary and anonymous.

Participants

Following ethical approval all 56 first and third year student midwives enrolled in the Bachelor of Midwifery in session two, 2012 were invited to volunteer: 24 agreed to participate.

Design

The PAR design is used widely in education (27), business (28), community development (29) and health (30). Development of practical knowledge is enabled through co-researchers engaging in repeated cycles of planning, acting, observing and reflecting (29, 31). Cycles in PAR are a collaborative, social process where participants actively engage in the evaluation and improvement of their own work practices (31). When practitioner/researchers are working in real time to bring about desired change, PAR is the best research design. The PAR design is appropriate when practitioners are focussing on problems in practice where the opinions and experiences of clients are critical to quality improvement.

Intervention

Bachelor of Midwifery students in Year 1 and Year 3 undertook two team-based assignments each in session two (15 weeks) 2012. Each team-based assignment was in a separate unit relevant to each year level. Year 1 students were in different teams for each assignment. Students in Year 3 were in the same team for both assignments. The Unit Information Guide of each unit provided detailed guidelines for students. Teams were required to post good quality drafts of their work in progress to the online learning site where the academics provided feedback on the work (e.g. abstract, or

introduction or literature search strategy). This mid-session academic feedback was provided to all students on the online learning site thus improving the standard of the final submission and ensuring learning during the session. The academic workload for this online teaching/feedback came from the hours saved in marking i.e. with a class of 40 divided into teams of 5 there are only 8 assignments to mark at the end instead of 40. Once the team assignment was complete, each student submitted peer feedback and marks for each team member. The academics passed on the anonymous peer feedback to the relevant student and the peer marks contributed to each student's final grade. The peer making criteria were developed by two experienced midwifery academics (second and third authors) following a review of the literature concerning peer-marking criteria. Following feedback from the other midwifery academics and some student representatives, the marking criteria were revised and implemented. The Peer-marking Criteria and instructions to students are available from the authors on request.

Data collection

Two online surveys were conducted; one for each year level. Members of the midwifery research team (the authors) developed the surveys using SurveyMonkey (31). Feedback on the surveys was sought from other midwifery academics and Teaching and Learning academics from the University. The final survey drafts were trialled by two non-midwifery students. Each survey consisted of three parts (see Table 1). Part A and Part B items were similar but specific to the two team-based assignments undertaken by each year level; items focused on, for example, the online learning experience. Part C items were relevant to both team-based assignments for each year level. The Part C items asked more general questions about doing team-based assignments such as whether it helped the student develop communications skills. Other items asked about team function: Year 1 students were in two different teams so they answered these questions twice; Year 3 students were in a single team so answered the questions only once. Brief comments were invited following each item. Two open-ended questions at the end of the survey provided opportunity for further comment. The full survey is available from the authors on request.

Data analysis

Data was initially collated using the online tools in SurveyMonkey (32). Results were later manually tabulated and an analysis was undertaken using descriptive statistics. Quantitative analysis occurred in three sections relative to the type of item, frequency students could answer the item and the student year level (see Table 2). All qualitative comments underwent thematic analysis, the results of which were then considered in relation to the quantitative findings. A rigorous process of quality assurance of results was undertaken by the non-teaching member of the research team; this included a careful check of all data linking the qualitative analysis to the original comments.

Results

The students were all female, aged between 18 and 60 years. The overall response rate to the survey was 42.8%. Six of the twelve third year students and 18 of the 44 first students undertook the survey. All Year 3 students answered all questions. A number of the items were skipped by first year students: 84% of items were answered. Half the respondents provided brief qualitative comments; all questions were commented on by at least one student and many of the first year comments were

extensive. The qualitative findings are encompassed in the Discussion section. The key quantitative results are presented in Table 2 and they are summarised below.

Summary of key quantitative findings

The results show that students generally agreed (> 60%) with statements that team-based assignments; i) should have peer-marking, ii) clarify what is meant by teamwork, iii) develop communication skills, and iv) promote student-to-student learning. Only third year students strongly agreed with statements that teams i) are a valuable preparation for teamwork in practice, ii) help meet Midwifery competency 8 "to develop effective strategies to implement and support collaborative midwifery practice" (5, p.7), and iii) were enjoyable. The third year students strongly agreed with statements that their team was effectively coordinated and that team members shared responsibility for the work equally. The majority of first year students strongly disagreed with the statements that i) they enjoyed working on the team assignment, ii) their team was effectively coordinated and iii) team members shared responsibility for the work equally. Students in both year levels (80% of total) valued teacher feedback on well-developed drafts of the team's assignment prior to marking.

Discussion

In this section the students' qualitative comments are considered as they expand upon the meaning of the quantitative findings.

Acceptability of team-based assignments and peer-marking

The notion of team-based assignments was well accepted. Most students valued and learnt from doing team-based assignments, although some students found the process of teamwork challenging. Similar results were found when nursing students evaluated their experience of team-based assignments (21). The quality and timeliness of teacher feedback was positively evaluated. Comments revealed that students perceived the online postings and teacher feedback as: a good way to gain feedback, to learn and improve; a way to see how other teams do the task; a useful prompt to action, and; a way to keep the team on the "right track".

Students generally considered that the team-based approach was appropriate to their type of assignment, even the essay. The main complaint about using an essay as a team-based assignment was the problem of differing writing styles and making the essay flow. The editing required to tie essay sections together was "immense", according to one student, and more than the team had allocated time for. One student commented that "this was a different way to write an essay, it was enjoyable and I learnt a lot from my team members". This student wrote that team essay writing does take "some getting used to" but was a "great way to share responsibility" and take "pressure off a heavy work load". Being able to share ideas and responsibility was a key reason why nursing students enjoyed teamwork (21).

Each student's individual contribution to the team-based project was assessed via the peer mark. One student commented that peers may have been marked too hard due to difficulties within the team. A student suggested that teams should be taught to "collectively agree" on their work grade then mark each other accordingly. Another student expressed a desire for feedback from peers

“along the way” to avoid being shocked by receiving only negative feedback at the end. This student explained, “it's really intense getting feedback from some students. Some are very cruel in their comments ... I didn't receive any positive feedback”. Nursing students also reported feeling uneasy with peer feedback (21) although giving peer marks was considered fairer (22). Development of a confidential online peer feedback system along with lessons about giving feedback have been recommended as ways to improve student experience of peer feedback and marking (22).

The peer-marking criteria were generally thought to be satisfactory. The ratio of lecturer / peer mark proportions of between 60:40 and 70:30 were believed to be more appropriate (i.e. the shared team mark would carry a heavier weighting than individual marks). Respondents did make suggestions for improvements, such as the provision of peer feedback during the project. Peer feedback was only provided at completion of the assignments whereas formative teacher feedback was given and considered particularly valuable. Frequent, timely feedback has been identified to promote learning of course content and teamwork skills (10). It is the students rather than academics who are best placed to give feedback about individual teamwork skills and how the team as a whole is functioning (10, 17). Student awareness of personal performance is improved with peer feedback (33). Peer feedback that is provided while students are undertaking their team-based project (i.e. formatively) positively influences their teamwork behaviours and their individual contributions to teams (13).

The perceived value of teamwork

Students gained a better understanding of what effective teamwork actually means. A sense of connection was fostered between most respondents. One student clarified the connection as “professional” in that they became more “respectful of one another” rather than “best friends”. Another student felt “closer” to some team members but to others she felt more “even more distant”. A third student recognised that the feeling of connection led to a sense that she was “essentially plugged in to the course”.

Students acknowledged that they learnt from other team-members; not just knowledge but also coping strategies. One student discovered that “age or life experience” does not necessarily make a person more mature. Another student found that her peers’ actions were shaping the way she would like to “work in a team in the future”; they provided examples of “the way I would like to be, and also the way I would not like to be”.

Most respondents considered that their academic teamwork was assisting them in meeting the relevant midwifery competency. Some first year students felt they were not a position to comment as their experience in clinical practice was so limited. One first year student wrote that working in teams had taught her “not to judge” and “not to believe what someone else says about someone” until she has the chance to work with that person. She explained further that teamwork “has given me confidence that I can be part of a team and it is okay to say "I don't know how to do that"”.

Team effectiveness and associated problems

Team effectiveness was measured according to team coordination, shared responsibility for tasks and management of power issues. All third years said that their teams were well coordinated. A first year student identified problems being “directed and focused” and another stated it “took us 8 weeks to agree on one thing”. One student explained: “my ideas were constantly rejected and the

group could not agree on anything for a very long time". Particular students were considered as "challenging group cohesion" due to "lack of professionalism" or because of perceptions that a student was "trying to sabotage" team efforts for her own gain. Nursing students reported similar obstacles to team effectiveness (21).

First year respondents appeared less able than third years to share responsibility for team tasks with most first years identifying that some team members did not contribute much. One first year student commented that her team divided up the work equally among members but the output of work was very different "two members did most of the work; the other three did very little - unfair!" A first year student also noted the quality of work of one team member "really disappointed me with their very small, poorly researched and unedited work".

Power Issues

The majority of respondents considered that some team members were too passive and/or submissive. A first year student stated "I am not very good at asserting myself... I want to get the job done and done well but I don't want to be bossy" whereas some students felt that particular team members were aggressive. A third year explained that some members of her team "did like to be 'the boss' and made some decisions without really consulting the group in an appropriate manner". A first year student stated that there was "a lot of aggression and emotion" within her team, she felt that "some members were misinterpreted or misjudged about what message they were trying to convey". One first year made claims of bullying and schisms within and between teams caused by student comments on the peer-marking sheets. Another student claimed to have experienced horizontal violence where team members laughed and joked about her in front of the group. One student felt a sense of alienation when other team members insisted on communicating via Facebook. This student did not feel her peers communicated honestly or clearly and she now feels betrayed by them and is "more protective and less trusting" as a result of the experience of team-based assignments. One insightful student explained that she "found it very hard to not be dominating" when she received "little to no communication" from her teammates; the student reflected on how "hard" it is to get students to "actively participate".

Student preferences for future team-based assignments

Students want only one team-based project per session. Requests to limit the number of team-based assignments based on workload did not appear to take into account that the assignments would still be required. In addition, these students did not appear to be aware that doing the same assignment individually would actually increase their workload.

The majority of respondents would prefer to be randomly allocated to a team. One respondent stated that she was "strongly against students selecting their own teams" as this was "not healthy" as they "all have to work together!" Another student recognised that if students chose their team members it would make team-based learning less effective as students were less likely to be "challenged". Requests that students or staff select team members according to student location were frequently made. The rationale for this was based on experiences of distance leaving students "disadvantaged", desires to "make scheduling meetings easier" and to "meet face to face to sort problems". These requests seemed to be based on problems with non face-to-face communication and a wish to avoid online forms of teamwork.

The need to teach students teamwork skills dominated the remaining suggestions. One such suggestion was to teach “how to resolve issues early ...instead of leaving it until the end”. A respondent wanted students to learn that teamwork was not “a personal attack; you will have to work with people you don't particularly like [so you] need strategies to manage this!” Another suggestion was to have compulsory sessions about using the online technologies “properly”. Also mentioned was learning about being professional at university as well as in practice; this learning could then include compliance with the team’s rules and respect for the roles team members were undertaking.

Conclusion

This evaluation of team-based academic assignments by two cohorts of undergraduate midwifery students was primarily positive. Students have indicated that they need more guidance, more specific teaching about teamwork, more teacher involvement, mid-session peer feedback and an improved ability to meet face to face. The TeamUP midwifery researchers have responded to the students’ evaluations in the following main ways:

1. Teams are allocated by the unit coordinator based on students’ geographical location with the team meetings to be conducted on one of the university’s three campuses.

2. All team meetings are now scheduled in the clinical calendar to be conducted face to face. In addition, students use wikis and social media to communicate in teams.

3. Assignment instructions have been strengthened to encourage sensitively given professional and honest feedback. Reference is made to academic and non-academic misconduct in order to deter abuse or collusion between students.

4. A detailed marking rubric has been created to guide students towards desired teamwork behaviours.

5. The students now give and receive peer feedback twice: once mid-session, following formative feedback by an academic on a draft of the team’s assignment and again on completion of their assignment.

6. Five teamwork lessons are being developed to specifically teach teamwork skills early in their course.

We recommend that well-structured and well-supported team-based assignments should be implemented in Bachelor of Midwifery courses to foster the development of students’ teamwork skills. As teamwork skills are a basic midwifery competency, we recommend that these team-based assignments are implemented in all midwifery courses leading to registration. We believe that this is the first midwifery study of students’ experiences of team-based academic assignments. A limitation of the study is that the numbers of students are relatively low as is the response rate. We believe, however, that given the importance of teamwork to the discipline, coupled with the lack of previous studies, publication of this research is justified so as to inform other academics of our findings. The work of the TeamUP PAR group continues. TeamUP has now expanded to the discipline of Education

and other health disciplines both within and outside the original university. Further research on teaching and assessing teamwork skills will be forthcoming in due time.

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Table 1: Year 1 and Year 3 Surveys

	Year 1 Survey	Year 3 Survey
	Part A: Items specific to team-based assignment A	
Assignment:	Health Education Sheet	Practice Improvement Plan
Team:	New team for this project	Same team for both projects
Number of items:	12 (3 items about team function)	9
	Part B: Items specific to team-based assignment B	
Assignment:	Essay	Childbearing Women's Groups
Team:	New team for this project	Same team for both projects
Number of items:	12 (3 items about team function)	9
	Part C: Items about BOTH team-based assignment	
Number of items:	12	15 (3 items about team function)
TOTAL items in survey	**36**	**33**

1 **Table 2: Results summary: How did students evaluate their experience of working on team-based assignments?**

ITEMS (written as statements)	Year Level	Number of Responses	Strongly Disagree	Disagree	Agree	Strongly Agree	Total Agree	Total Agree%
1. General items about team-based assignments: Students could answer item only once								
a) Team-based assignments clarified my idea of effective teamwork	1	15	1	4	7	3	**10/15**	**66.7**
	3	6	0	1	3	2	**5/6**	**83.3**
b) Team-based assignments helped develop communication skills	1	15	0	4	8	3	**11/15**	**73.3**
	3	6	0	1	4	1	**5/6**	**83.3**
c) Team-based assignments helped develop social skills	1	15	1	6	4	4	**8/15**	**53.3**
	3	6	1	1	3	1	**4/6**	**66.7**
d) Team based assignments helped develop a sense of connection with other students	1	15	1	7	3	4	**7/15**	**46.6**
	3	6	0	2	3	1	**4/6**	**66.7**
e) I learnt from other students by working in teams	1	15	2	2	7	4	**11/15**	**73.3**
	3	6	0	1	4	1	**5/6**	**83.3**
f) Team based assignments are valuable for preparing me to work in teams in practice	1	15	2	5	6	2	**8/15**	**53.3**
	3	6	0	0	4	2	**6/6**	**100**
g) Team based assignments help to meet Midwifery competency 8 "to develop effective strategies to implement and support collaborative midwifery practice" (5)	1	15	0	7	5	3	**8/15**	**53.3**
	3	6	0	1	4	1	**5/6**	**83.3**
h) I enjoyed working on the team assignment	1	15	5	5	4	1	**5/15**	**33.3**
	3	6	0	1	4	1	**5/6**	**83.3**
2. Items specific to each team-based assignment: Students could answer items twice, once for each assignment								
a) Peer-marking criteria are appropriate for the team-based assignment	1	32	0	12	17	3	**20/32**	**62.5**
	3	12	0	2	7	3	**10/12**	**83.3**
b) Online posting of 'good drafts' for formative teacher feedback was valuable	1	33	1	7	11	14	**25/33**	**75.8**
	3	12	0	1	7	4	**11/12**	**91.6**
3. Items about team function: Year 1 students ONLY had two different teams and could answer items for each team								
a) My team/s was effectively coordinated	1	31	5	16	9	1	**10/31**	**32.3**
	3	6	0	0	3	3	**6/6**	**100**
b) Team members shared responsibility for the work equally	1	31	5	18	6	2	**8/31**	**25.8**
	3	6	0	1	2	3	**5/6**	**83.3**

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