

Chapter 9

Teaching and Curriculum Development in Mass and Universal Higher Education

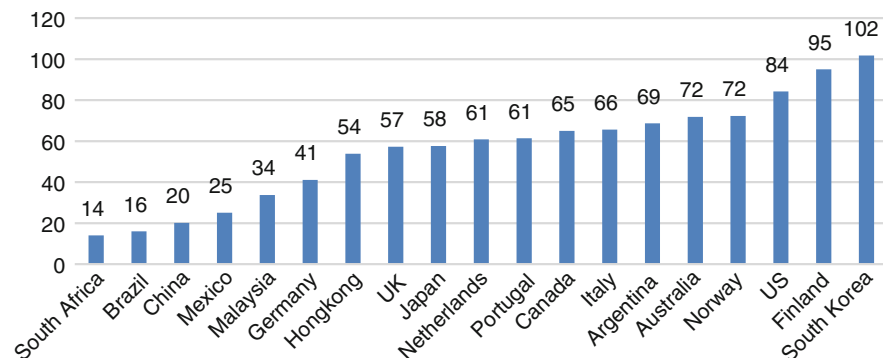
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9.1 Introduction

Teaching and curriculum development play an important role in faculty members' academic life. Except for the few of faculty members from systems that have a stronger preference for research such as Germany and Japan, a majority of university professors are involved in teaching activities in such countries as Argentina, Brazil, China, and Mexico. The patterns, content, methods of instruction, and curriculum development in university education not only keep changing constantly over time, but also vary greatly according to different systems and countries. Martin Trow pointed out that the different phases of higher education are associated with different curricula and forms of instruction (Trow 2005).

Up to now, a great deal of research has been conducted on university academics' teaching activities and their role in curriculum development from various perspectives. For example, the international survey of the academic profession was implemented in 1992 across 14 countries and the international survey on the Changing Academic Profession (CAP) which was carried out in 2007 and 2008 in 19 systems have led to numerous follow-up studies (Huang 2013). Many earlier studies were concerned with key characteristics of academics' teaching activities in individual countries, but international and quantitative research into aspects of academics' teaching, their engagement in curriculum development, and features of curriculum development at mass and universal phases of higher education are rare. Little research has been undertaken on academics' involvement with university curriculum development, in particular the role academics play in the process, from an empirically based comparative perspective.

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Table 9.1 Higher education enrollment rates across 19 systems

Sources: <http://www.uis.unesco.org> The German data is obtained from Education at a Glance OECD INDICATORS 2010 EDITION. World Bank's database World Development Indicators at <http://www.worldbank.org/>. The data of South Africa is provided by the CAP research team from South Africa

The CAP surveys give an indication of what professors do and what they think about what they do. For the analysis below, except for South Africa in which the enrollment rate is still below 15 % of its relevant age group, this study has divided the 18 participating teams into two groups—the first called the mass group refers to the academics working in higher education systems that achieved their enrollment rates over 15 % but below 50 %; the second group includes those from higher education systems where enrollment rates exceed 50 % and have moved into the phase of near universal access to universal higher education (Cummings and Santner 2013). As shown in Table 9.1, the higher education systems in these respective stages are as follows:

- Elite: South Africa
- Mass: Argentina, Brazil, Malaysia, Mexico, Germany
- Near Universal Access or Universal: Australia, Hong Kong, Finland, Germany, Italy, Netherlands, Portugal, US, Canada, UK, Norway, Japan, Korea.

9.2 Research Framework and Method

9.2.1 A Conceptual Framework

Taylor's basic principles about curriculum development and instruction, and Stark's new definition of curriculum are of relevance and significance to this study (Tayler 1949; Stark and Lattuca 1997). They are discussed extensively in the literature on teaching and curriculum development (e.g., Bobbit 1918; Dewey 1938; Dressel 1963; Evelyn 1996; Goodlad and Associates 1979; Goodlad and Su 1992; Haworth et al. 2002; Levin 1977). According to Taylor, the process of university curriculum development consists of four stages:

1. What educational purposes should the school seek to attain?
2. How can learning experiences be selected which are likely to be useful in attaining these objectives?
3. How can learning experiences be organized for effective instruction?
4. How can the effectiveness of learning experiences be evaluated?

Several scholars use ‘plan’ as a synonym for curriculum (Eisner 1979; Taba 1962). Stark and Lattuca (1997) use academic plan to describe the current state of affairs and introduce design when they wish to convey a revised and more intentional process that faculty members in any discipline might pursue after considering alternatives. Specially, they propose that the academic plan should include at least the following elements: purpose, content, sequence, learners, instructional processes, instructional resources, evaluation and adjustment (p. 10). Each of the seven elements of the plan implies an associated planning step as follows (pp. 15–16)

1. Purpose: Setting educational goals and objectives
2. Content: Selecting subject matter
3. Sequence: Organizing content appropriately
4. Learners: Considering characteristics, goals, and abilities of learners
5. Instructional resources: Selecting learning materials
6. Instructional processes: Selecting learning and teaching activities
7. Evaluation: Assessing student outcomes, and appraising learner and teacher satisfaction with the plan
8. Adjustment: Making improvements in both the plan and the planning process

Adopting Taylor’s basic principles about curriculum development and instruction, and Stark and Lattuca’s definition of academic plan, while utilizing relevant data from the CAP surveys, this chapter will address the following research question:

Are there differences in academics’ teaching activities and their involvement in curriculum development comparing those from mass higher education systems with those from universal or near universal access to higher education systems?

Because of the limitation of the corresponding data from the CAP surveys in individual systems, and especially the fact that this study focuses on the discussion of key features of academics’ teaching activities and their participation in and views of curriculum development, the study primarily deals with the following issues by modifying both Taylor’s principles and basic elements consisting of academic plan which is illustrated by Stark and Lattuca (Fig. 9.1).

1. Purpose: because educational purpose data are lacking in the CAP surveys, the study discusses which actor has a primary influence on approving new academic programs.
2. Content: it addresses the issues of how academics engage in designing, selecting and providing teaching materials.
3. Instructional resources: it analyzes how the academics selected their teaching materials.

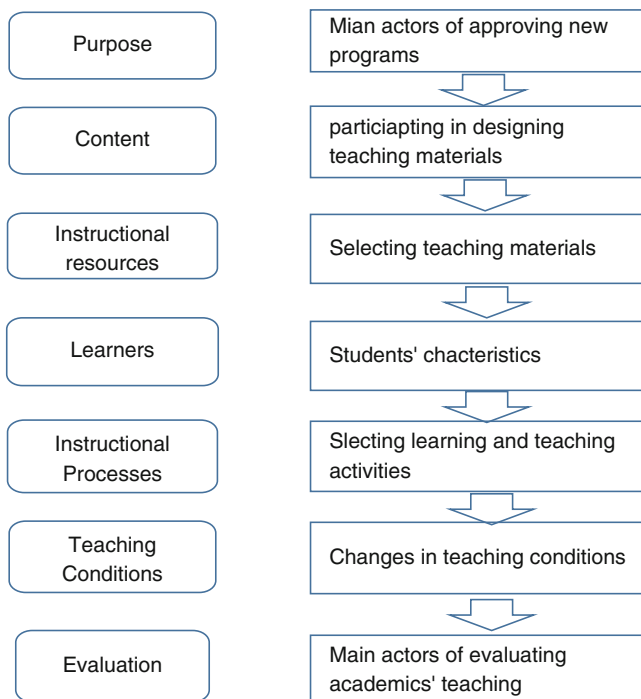


Fig. 9.1 Research framework on teaching and curriculum development (Source: Created by the author 2014)

4. Learners: it is mainly concerned with number of students taught on programs at different levels of study programs and how do academics view their students.
5. Instructional processes: it deals with major instructional methods employed by academics in their teaching activities.
6. Teaching conditions: it presents academics' perception of changes in teaching conditions,
7. Evaluation: it discusses which actor has the most powerful impact on teaching evaluations.

This chapter attempts to undertake a comparative research on major aspects of the academics' teaching activities and their role in curriculum development, as well as their perceptions on these activities between the mass higher education systems and the universal higher education systems based on major findings from the CAP surveys administered in 2007–2008. The chapter begins with a brief introduction to the research framework and methodology. Then it analyzes the similarities and differences in the academics' teaching activities and their involvement in curriculum development across two different phases of higher education systems. The chapter concludes by arguing that though differences could be found in some aspects of the curriculum and instructional methods, as well as the relationship between student and teacher while higher education shifts from mass phase to universal phase,

significant changes do not necessarily occur in all the aspects of academics' teaching and their role in curriculum development across the universal higher education systems and mass higher education systems.

9.2.2 Method

As noted previously, the CAP surveys were conducted in 18 countries and Hong Kong during the period 2007–2008. The common aim was to reach an “effective” sample of 800 professors in degree granting institutions. Some countries used mail surveys and other electronic means. It is required that response rates were at least 20 % (where an electronic survey technique was used, many mailings were blocked and hence response rates tended to be low). The characteristics of the samples of almost all the participating countries teams are available in existing publications (RIHE 2008). The descriptive characteristics of the respondents who work in the mass higher education systems and universal or near universal access to higher education systems are provided in Table 9.2.

By discipline, in the universal higher education systems, the largest proportion of the professors are from humanities and arts (14.9 %), followed by those from medical sciences, health related sciences, social services (13.6 %), and the third largest group is in the field of physical sciences, mathematics, computer sciences (13.3 %). In the mass higher education systems, academics from engineering, manufacturing and construction, architecture (19.8 %) account for the largest share of the total, the faculty members from physical sciences, mathematics, computer sciences are the second largest group (17.8 %), and the those from medical sciences, health related sciences, social services (10.0 %) constitute the third largest group of the total. Although there are many reasons behind the different dispositions of the faculty

Table 9.2 Discipline or field of current teaching (percent)

| | Universal | Mass |
|--|-----------|------|
| Teacher training and education science | 7.6 | 7.3 |
| Humanities and arts | 14.9 | 9.5 |
| Social and behavioral sciences | 12.1 | 5.1 |
| Business and administration, economics | 8.4 | 9.7 |
| Law | 2.7 | 2.6 |
| Life sciences | 6.6 | 4.6 |
| Physical sciences, mathematics, computer sciences | 13.3 | 17.8 |
| Engineering, manufacturing and construction, architecture | 12.0 | 19.8 |
| Agriculture | 3.4 | 2.1 |
| Medical sciences, health related sciences, social services | 13.6 | 10.0 |
| Other | 3.7 | 5.0 |
| Not applicable | 1.6 | 1.3 |

Source: From the CAP database in September 2011

members by discipline across the two different systems, in a relative term more percentage of the professors from the universal systems are involved in teaching educational activities of soft sciences: humanities and arts. In contrast, those work in the mass higher education systems undertake more teaching in hard sciences, e.g. engineering, manufacturing and construction, architecture. It is possible that a greater percentage of learners in humanities and arts are recruited into universal higher education systems compared to those in engineering, manufacturing and construction, architecture in mass higher education systems. This may be one of the learner characteristics in this study.

9.3 Results

Table 9.3 presents the average percentages for the academics who responded in terms of which actor has the primary influence on approving new academic programs at their institutions. In the universal higher education systems, 47.2 % reported that faculty committees/boards have the primary influence on approving new academic programs in their institutions, 26.0 % reported that their institutional managers have the primary influence. 16.8 % of respondents answered that academic unit managers have primary influence, while in the mass higher education systems, 35.6 % reported their institutional managers have the primary influence, followed by those who believed that government or external stakeholders affected the approval of their new academic programs (29.3 %), and only 19.0 % of the academics indicated that faculty committees/boards have the primary influence on approving new academic programs.

Question At your institution, which actor has the primary influence on each of the following decisions?

Question During the current (or previous) academic year, have you been involved in any of the following teaching activities?

Although individual faculty members from either of the higher education systems may not have primary influence on approving new academic programs in their institutions in comparison with other actors, Table 9.4 reveals that over half of the academics from both higher education systems were involved in developing curricula and programs with more percentages of the academics from the universal

Table 9.3 Main actors in approving new program (percent)

| | Universal | Mass |
|-------------------------------------|-----------|------|
| Government or external stakeholders | 6.0 | 29.3 |
| Institutional managers | 26.0 | 35.6 |
| Academic unit managers | 16.8 | 14.5 |
| Faculty committees/boards | 47.2 | 19.0 |
| Individual faculty | 4.0 | 1.2 |
| Students | 0.1 | 0.0 |

Table 9.4 Academics' involvement with curriculum development

| | Universal | Mass |
|--------------------------------|-----------|------|
| Development of course material | 74.0 | 48.0 |
| Curriculum/program development | 58.1 | 51.0 |

Table 9.5 Academics' positive views and activities about teaching (percent; responses 1 and 2)

| | Universal | Mass |
|---|-----------|------|
| Practically oriented knowledge and skills are emphasized in your teaching | 63.2 | 79.1 |
| In Your courses you emphasize international perspectives or content | 62.0 | 65.6 |
| You incorporate discussions of values and ethics into your course content | 58.3 | 67.5 |

Table 9.6 Average number of students taught on programs at different levels of study programs (means)

| | Universal | Mass |
|--|-----------|------|
| Undergraduate programs | 83.4 | 74.1 |
| Master programs (*) | 23.5 | 18.4 |
| Doctoral programs | 6.0 | 3.4 |
| Continuing professional education programs | 16.1 | 21.7 |
| Other programs | 14.1 | 14.2 |

systems. In terms of development of course material, a much larger proportion of the faculty members from the universal higher education systems were involved (74.0 %) compared to 48.0 % of the professors from the mass higher education systems.

Question Please indicate your views on the following: (Scale of answer from 1 = Strongly agree to 5 = Strongly disagree)

Table 9.5 shows that more than 60 % of the respondents from both systems reported that practically oriented knowledge and skills and international perspectives or content are emphasized in their teaching activities. 67.5 % of the academics from the mass higher education systems reported that they incorporate values and ethics into their teaching content, which is a higher percentage than those from the universal systems.

Question Please indicate the proportion of your teaching responsibilities during the current academic year that are devoted to instruction at each of these levels. (number of students per course) (*) Please note: Master programs in Germany include long initial degree programs.

As Table 9.6 suggests, in both systems the largest student group whom the academics taught are at the level of undergraduate programs, though the academics from the universal higher education systems taught more students at this level. In the universal systems, the second largest group of students whom the academics taught belong to the level of master programs (23.5 %). In the mass systems, they

Table 9.7 Types of instructional methods across countries involvement in types of teaching activities (percent; multiple responses)

| | Universal | Mass |
|---|-----------|------|
| Classroom instruction/lecturing | 96.5 | 96.5 |
| Individualized instruction | 73.8 | 70.3 |
| Learning in projects/project groups | 45.6 | 44.2 |
| Practice instruction/laboratory work | 48.8 | 56.1 |
| ICT-based learning/computer-assisted learning | 28.7 | 37.5 |
| Distance education | 16.1 | 10.0 |
| Face-to-face interaction with students outside of class | 80.8 | 73.2 |
| Electronic communication (e-mail) with students | 83.4 | 65.1 |

refer to students in continuing professional educational programs (21.7 %). The third largest group of students in the universal systems are those studying in continuing professional educational programs (16.1 %) compared to those students in master programs (18.4 %) in the mass systems.

Question During the current (or previous) academic year, have you been involved in any of the following teaching activities?

With respect to instructional methods, Table 9.7 shows that no significant differences were found in the academics' responses to classroom instruction/lecturing, individualized instruction, and learning in projects/project groups. On average, more than 96 % of all the respondents from the two systems agreed that they employed classroom instruction/lecturing in their teaching. The dominance of the traditional teaching strategy is evident and profound. However, the data also show that a larger percentage of the academics from the universal systems adopted electronic communications (e-mail) with students (83.4 %), face-to-face interaction with students outside of the classroom (80.8 %), and individualized instruction (73.8 %) as their major teaching methods in particular. In contrast, a larger percentage of the academics from the mass systems utilized practice instruction/laboratory work (56.1 %) and ICT-based learning/computer-assisted learning (37.5 %).

Question At this institution, how would you evaluate each of the following facilities, resources, or personnel you need to support your work? (Scale of answers from 1=Excellent to 5=Poor)

Table 9.8 shows that more than half of the academics from both systems made positive assessment of their institutions' support for their work in computer facilities and telecommunications. However, less than half of academics in the universal system had a positive assessment of classroom, laboratories, secretarial support and teaching support less than half of the academics from the mass system reported a positive assessment of technology for teaching, laboratories, library facilities and services, their office space, secretarial support, and teaching support staff for their work. In the universal systems, a larger percentage of the academics were satisfied with computer facilities, library facilities and services, their office space, and telecommunications. By contrast, a higher percentage of the academics from the mass

Table 9.8 Academics’ positive assessment of institution’s support for their work (percent; responses 1 and 2)

| | Universal | Mass |
|---|-----------|------|
| Classrooms | 48.8 | 53.8 |
| Technology for teaching | 51.2 | 49.3 |
| Laboratories | 36.5 | 41.2 |
| Computer facilities | 54.5 | 50.7 |
| Library facilities and services | 58.7 | 48.0 |
| Your office space | 52.8 | 43.5 |
| Secretarial support | 33.9 | 33.5 |
| Telecommunications (Internet, networks, and telephones) | 66.2 | 52.0 |
| Teaching support staff | 26.8 | 32.2 |

Table 9.9 Perceived changes in working conditions in higher education (percent; arithmetic mean)

| | Universal | Mass |
|--------------------------|-----------|------|
| 1 Very much improved | 5.0 | 16.4 |
| 2 | 19.3 | 30.9 |
| 3 | 31.7 | 28.8 |
| 4 | 28.7 | 15.7 |
| 5 Very much deteriorated | 15.1 | 8.5 |

systems had a positive assessment on their institution’s support for their work in classrooms, laboratories, and teaching support staff.

Question B7 Since you started your career, have the overall working conditions in higher education and research institutes improved or declined? (Scale of answer from 1 = Very much improved to 5 = Very much deteriorated)

As shown in Table 9.9, although small percentages of the academics from both systems agreed that their working conditions had been very much improved, a much higher percentage of the academics from the mass higher education systems believed that their working conditions had improved. If their responses to “2” are included, nearly half of them (47.3 %) confirmed the improvement to their working conditions. By contrast, as high as 15.1 % of the academics from the universal systems stated that their working conditions had significantly deteriorated compared to only 8.5 % of the other academics.

Question E1 At your institution, which actor has the primary influence on each of the following decisions?

Table 9.10 shows that no significant differences could be identified in the academics’ responses to the influence from academic unit managers on academics’ teaching activities. From a comparative perspective, 24.5 % believed that their students had the primary influence on the evaluation of their teaching activities, followed by faculty committees/boards (24.2 %), and academic unit managers (22.8 %). In the mass systems, 27.1 % asserted that their institutional managers had primary influence on evaluating their teaching activities, followed by their academic unit managers (22.9 %), and then government or external stakeholders (20.1 %).

Table 9.10 Main actors of evaluating academics' teaching activities

| | Universal | Mass |
|-------------------------------------|-----------|------|
| Government or external stakeholders | 2.0 | 20.2 |
| Institutional managers | 16.1 | 27.1 |
| Academic unit managers | 22.8 | 22.9 |
| Faculty committees/boards | 24.2 | 16.9 |
| Individual faculty | 10.4 | 3.5 |
| Students | 24.5 | 10.0 |

9.4 Discussion

There are several noticeable differences in the academics' composition by discipline, their teaching activities and their involvement in curriculum development. To sum up, within the mass phase of higher education systems, the largest percentage of the academics are in engineering, manufacturing and construction, or architecture. Their institutional managers had the greatest influence on evaluating their teaching activities, and they emphasized practically oriented knowledge and skills in their teaching. They taught more students in continuing professional educational programs, employed more instructional methods of practice instruction/laboratory work and ICT-based learning/computer-assisted learning. Compared to the academics in the universal systems, they had a higher positive assessment of their classrooms, laboratories, and teaching support staff. They believed that their working conditions had been greatly improved. Similar to the approval of new academic programs, their institutional managers exerted the most significant impact on evaluating their teaching. In contrast, in the universal systems, the largest percentage of the academics are from humanities and arts. Faculty committees/boards had the primary influence on approving new academic programs. They were more actively involved in curriculum development and taught more graduate students. More of them adopted electronic communications (e-mail) with students, face-to-face interaction with students outside of the classroom, and individualized instruction. Although a higher percentage of them had a positive assessment on computer facilities, library facilities and services, their office space, and telecommunications, they did not think their working conditions had been improved very much. In relation to evaluation, their students had the strongest influence on their teaching.

On the other hand, many similarities could also be identified between the academics coming from the different stages of higher education. For example, a majority of them engaged in curriculum development and teaching materials. Despite minor differences, they all incorporated a diverse range of materials into their teaching. They taught the largest percentage of undergraduate students and they organized learning experiences in the most traditional way: classroom instruction/lecturing. Over half of them appear to be satisfied with computer facilities and telecommunication.

9.5 Limitation

Curriculum development is a complex and changing process in which many actors, activities, and components are involved. Because the main purpose of the CAP international surveys is not focused on the role of academics in curriculum development, this study has certain limitations. First, as presented earlier, the research framework only deals with several stages or aspects of curriculum development. Issues concerning the educational purposes of particular universities, the extent to which these are attained are not addressed, and the information on learners is lacking. Second, due to the limited questions and data about curriculum development, this study can hardly provide in-depth information about the level of academic involvement with curriculum development. Third, even within each higher education system, there is a wide variety of higher education enrollment rates. For example, in the mass higher education systems, the higher education enrollment rate in Brazil is only 16 % of its relevant age group while in Germany it is as high as 41 %. Similarly, among the universal higher education systems, on one hand, the rate of higher education participation in Hong Kong is 54 %; and on the other hand, in South Korea it is as high as 102 %. These huge differences make it impossible to describe an accurate portrait of the academics' teaching activities and their engagement in curriculum development. Finally, with regard to the study of teaching and curriculum development, as the samples of the academics from two phases of higher education systems, especially those from the stage of mass higher education systems only include five countries, their characteristics may not apply to other countries or other regions.

9.6 Conclusion

This tentative study of the academics' teaching and their participation in curriculum development from the comparative perspective partly supports Trow's research on the changing character of the curriculum and the forms of instruction, as well as the relationships between student and teacher in particular while higher education moves from mass stage to universal or near universal access to higher education. As student numbers grew, the academics from the universal higher education admitted that they taught more students particularly at the level of undergraduate education. They tend to employ more diverse instructional methods like electronic communications (e-mail) with students, face-to-face interaction with students outside of the classroom, and individualized instruction. A higher percentage of them complained that their working conditions had deteriorated. Their students were the primary influence on evaluating their teaching activities.

However, the study also suggests that the differences between mass higher education and universal higher education are not quite so fundamental and are not identified in every aspect of higher education. In other words, remarkable changes

do not necessarily happen to all the aspects of academics' teaching and their role in curriculum development with the advancement of higher education enrollment rates from the mass phase to the phase of universal or near universal access to higher education. As discussed earlier, in either phase of higher education, academics still play a key role in designing, selecting, and providing teaching materials in their teaching. A huge majority of them still use the traditional instructional methods.

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